National Parks & Conservation Magazine

The Environmental Journal

April 1978

Alaska and the American Future

WHAT WE, the American people, do about the national interest lands of Alaska during the next few months will be a test of our national character; hence a foretaste of our destiny.

In a hopeful view of the future for America as a whole, we could stabilize our population, mainly by cutting off illegal immigration, reorganize our demands on energy and mineral resources, bring our forests under ecological management, protect and restore our wildlife, preserve and enlarge our parks, cleanse our water and air once again, restore the green spaces to our cities, and rescue the countryside. We could reestablish a physical environment which would befit a high civilization.

Or we could lapse into disintegration, yielding to the lawless invasions across our borders, continuing to squander our fossil fuels and our remaining metal ores, clearcutting our forests, allowing our parks to deteriorate, suffering passively from foul air and water, permitting the central cities to decay, and surrendering the farmlands, woods, wetlands, of the open country to the speculators. The degradation would be the measure of the collapse of our culture; the consequences would be not merely ecological, but economic and political as well.

Alaska is a fresh slate. Alaskans and all of us together may write our national will upon it. In so doing we shall further define our character in irreversible history and determine the nature of the lives our descendants must live.

WITHIN the next few months, and by law before the end of the year, Congress, as the agent of the people, will choose whether to place more than 100 million acres of Alaskan wildlands, known as the national interest lands, within the protection of the national park, wildlife refuge, national forest, wild and scenic river, and wilderness systems, or to open them to private exploitation.

Bills which would provide a high measure of protection and which have the support of most conservationists are pending in Congress (Udall, HR 39, and Metcalf S 1500). Weakening amendments and bad substitutes will be proposed, however, and must be fought off. The 116 million acres proposed in the original House bill have already been reduced in subcommittee to 97 million acres; more cuts will be proposed in the full committee, on the floor of the House, and in the Senate. They might reduce the total even below the modest 92 million acres recommended by the Administration unless Congress is made aware of the widespread public support for preservation in Alaska. We urge our members to write to their congressmen and senators pressing for the larger acreages. (For more details on the legislation, see NPCA at Work item beginning on page 22.)

WE HAVE OPPOSED one aspect of the Udall-Metcalf legislation, meritorious though the bills may be otherwise. A new category of units of the National Park System, known as "national preserves," has been developed in recent years, of which Big Cypress and Big Thicket are examples. This category has been used extensively in the Udall bill for the purpose of permitting sport hunting and mining, as contrasted with the "national park" category, where these activities are prohibited. The original House bill specified three such preserves—Noatak, Yukon-Charley, and the Wrangells.

The NPCA has opposed this classification, and has recommended full national park status, with sport hunting and mining prohibited; as noted below, we do not oppose native subsistence hunting. The subcommittee in the House, however, added additional national preserves, for a total of ten. Such units would now be carved out of nearly every new national park and monument created by the legislation. They would include most of the primary wildlife habitat—the low country—leaving mostly rocks and ice in the parks. We urge our members to seek the elimination of the so-called national preserves from the bill, restoring full national park and monument status without sport hunting or mining.

MEN HAVE LIVED in harmony with nature in Alaska for long millenia. The Alaskan Natives, Esquimaux, Indians, Aleuts have drawn their sustenance from the wild creatures of the land, but have not destroyed them nor the life-

Continued on page 31

ISSN 0027-9870

National Parks & Conservation Magazine

The Environmental Journal Vol. 52, No. 4, April 1978
NPCA · National Parks & Conservation Association · NPCA

COVER Solar Spectacular, December 19, 1973; photograph by NASA
The tremendous energy of the sun is beyond the comprehension of most of us. The temperature of the churning gases at its surface is approximately 4,000 centigrade, but it quickly increases to about 500,000 degrees in the chromosphere and some 3 million degrees in the corona (black area of photo). The sun's energy is so powerful that it lights and warms our planet from 93 million miles away. Occasional solar explosions like this one photographed by Skylab 4 astronauts—which sent clouds of helium gases blasting outward 550,000 miles from its surface—cause so-called geomagnetic storms that may disrupt broadcast communications and even common power transmission lines and cause navigational instruments to go haywire. Such storms also cause the spectacular and well-known aurora borealis, or northern lights. If only mankind could further utilize this incredible energy. . . . *(See page 16.)*

Eugenia Horstman Connally, ***Editor***
Joan Moody, ***Assistant Editor***
Nancy Schaefer, ***Production Assistant***

National Parks & Conservation Association, established in 1919 by Stephen Mather, the first Director of the National Park Service, is an independent, private, nonprofit, public service organization, educational and scientific in character. Its responsibilities relate primarily to protecting, promoting, and enlarging the National Park System, in which it endeavors to cooperate with the National Park Service while functioning as a constructive critic. In addition, the Association engages in domestic and international programs involving parks, forests, wildlife, wilderness, recreation, open space, rivers, oceans, pollution, pesticides, ecology, environment, population, transportation, historic and archeological preservation, natural resources, and related or comparable matters. Life memberships are $750. Annual membership dues, which include a $7 subscription to National Parks & Conservation Magazine, are $150 Sustaining, $75 Supporting, $30 Contributing, $22 Cooperating, and $15 Associate. Student memberships are $10. Single copies are $2. Contributions and bequests are needed to carry on our work. Dues in excess of $7 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 National Parks & Conservation Association, 1701 Eighteenth Street, NW, Washington, D.C. 20009. When changing address, allow six weeks' advance notice and send address label from latest issue along with new address. Advertising rates are available on request from headquarters in Washington.

National Parks & Conservation Magazine is published monthly. Contributed manuscripts and photographs are welcome. They should be addressed to the Editor at Association headquarters and should be accompanied by a stamped, self-addressed envelope. No responsibility can be assumed for unsolicited material. Articles are published for educational purposes and do not necessarily reflect the views of this Association. Printed in the United States. Second-class postage paid at Washington, D.C., and at other offices.

A portion of the land bridge over which the ancestors of all American Indians first entered the New World is proposed as a national preserve

by T. STELL NEWMAN

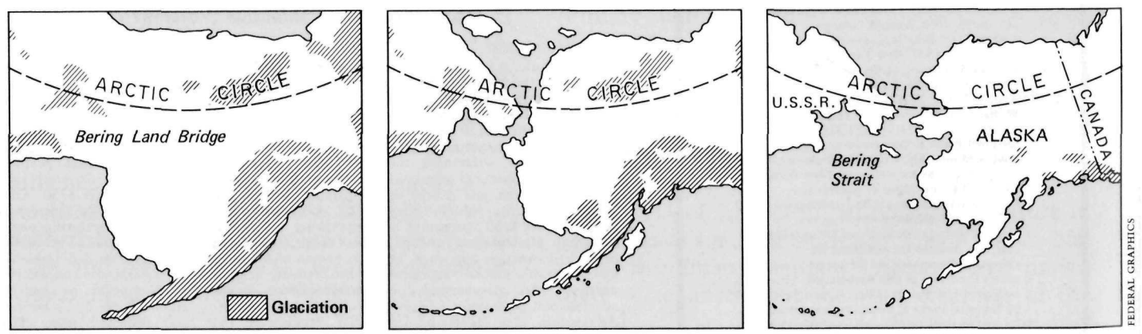
BERING LAND BRIDGE: Arctic Causeway to the New World

DURING the last great ice age of the Pleistocene Epoch—about 20,000 years ago—the lands and waters of much of the Northern Hemisphere lay lifeless beneath a frigid waste of glacial ice thousands of feet thick. One area was spared the grip of ice, however, for a broad belt of land linking what we now know as Alaska and Siberia was gradually exposed by the shrinking seas, whose waters were locked within the gigantic continental glaciers. Across this immense bridge of land, measuring almost a thousand miles from north to south, the first humans entered the New World.

Many Old World plants and animals had prepared the way. Some, like the marsh grasses, crept onto the new land bridge by pushing out roots and tendrils to grip its marshy edges. Others, the mosses and lichens, inched slowly up its drying slopes. Still others, the seeds of upland grasses and shrubs, blew on the wind, to sprout and root on the verges of inland lakes. As the plants took root and flourished, insects, birds, and grazing mammals followed, pushing ever farther in search of food.

The descendants of some of those animals that browsed and grazed their way eastward across the bridge—caribou, musk oxen, and moose—still roam the Arctic tundra. But the huge woolly mammoth, so prized by prehistoric hunters for its flesh and ivory, now exists only as scattered remains within the permafrost.

In the wake of the grazing herds stalked the predators—saber-toothed cats, wolves, bears, and man. Wrapped in animal skins against the cold and armed with stone-tipped weapons, the first hunters crossed the broad bridge to the New World, which would in time be peopled by their descendants—all the American Indians of the Western Hemisphere.



20,000 YEARS AGO — 12,000 YEARS AGO — TODAY

WITH THE RETREAT of the continental glaciers, the sea again claimed this vast ancient bridge of land. Its closest-lying segments are now separated by the sixty miles of the Bering Strait, just south of the Arctic Circle. If Congress approves, part of one of these remnant land forms, on the Seward Peninsula in northwestern Alaska, will be included in the proposed Bering Land Bridge National Preserve, thus preserving a fundamental aspect of America's heritage not now represented in the National Park System.

Although it will encompass only a small portion of the ancient land bridge, the preserve contains immense deposits of paleontological remains directly related to the Bering Land Bridge. A few traces of early man have been found to date in the proposed preserve, and more are likely to be present, because the deposits yield remains of the mammoths, horses, and giant bison that early man is known to have hunted. Scientific studies of these paleontological deposits already have provided a wealth of information about the environment of the land bridge—its animal life, vegetation, and even its climate. Preservation is so excellent in the frozen permafrost soil that intact leaves, twigs, and wood are routinely found. Pollen of plants common during the time of the land bridge are perfectly preserved in the lake sediments, and an entire vegetation system is found beneath the protective cover of an extensive volcanic ash deposit. A Pleistocene beaver dam has been found within the preserve, and even remains of insects and small mammals are there.

One of the most intriguing aspects of the area is that the general features of the terrain are today essentially the same as they were when the land was part of Siberia, because this land was never glaciated except for small areas in the mountains. And the visitor who stumbles, as I did, on a mammoth skull rolling in the surf of a Bering Strait beach can easily imagine early hunting parties stealthily pursuing these huge shaggy beasts across the rolling hills or near one of the many lowland lakes. We found five such skulls that week, as well as a leg bone and innumerable small fragments of mammoth tusk that had melted out of the permafrost cliffs to lie scattered along the beach.

It will be a challenge for a visitor to stand upon this relic terrain, however, because the preserve is very remote. Access will be by commercial airline to Nome or Kotzebue and then by boat or charter bush plane. One well-maintained dirt road leads north from Nome to near the southern boundary of the preserve, so it will be possible to drive to within hiking distance. Nome will be the primary access point, and the preserve headquarters and visitor center will be located there.

Probably none but the most hardy will see the preserve clothed in snow, for the area is awesomely desolate during the long, dark winter. A frigid continental climate displaces the moist summer maritime climate in the winter because of the freezing of the sea. Then, the wind sweeps unimpeded across the sea ice out of the bitter interior of Siberia, and the sun provides only a pale twilight for a few brief hours each day; the rest of the time the land is shrouded in darkness. Yet, during the winter months Eskimos living near the

ROBERT BELOUS, NATIONAL PARK SERVICE

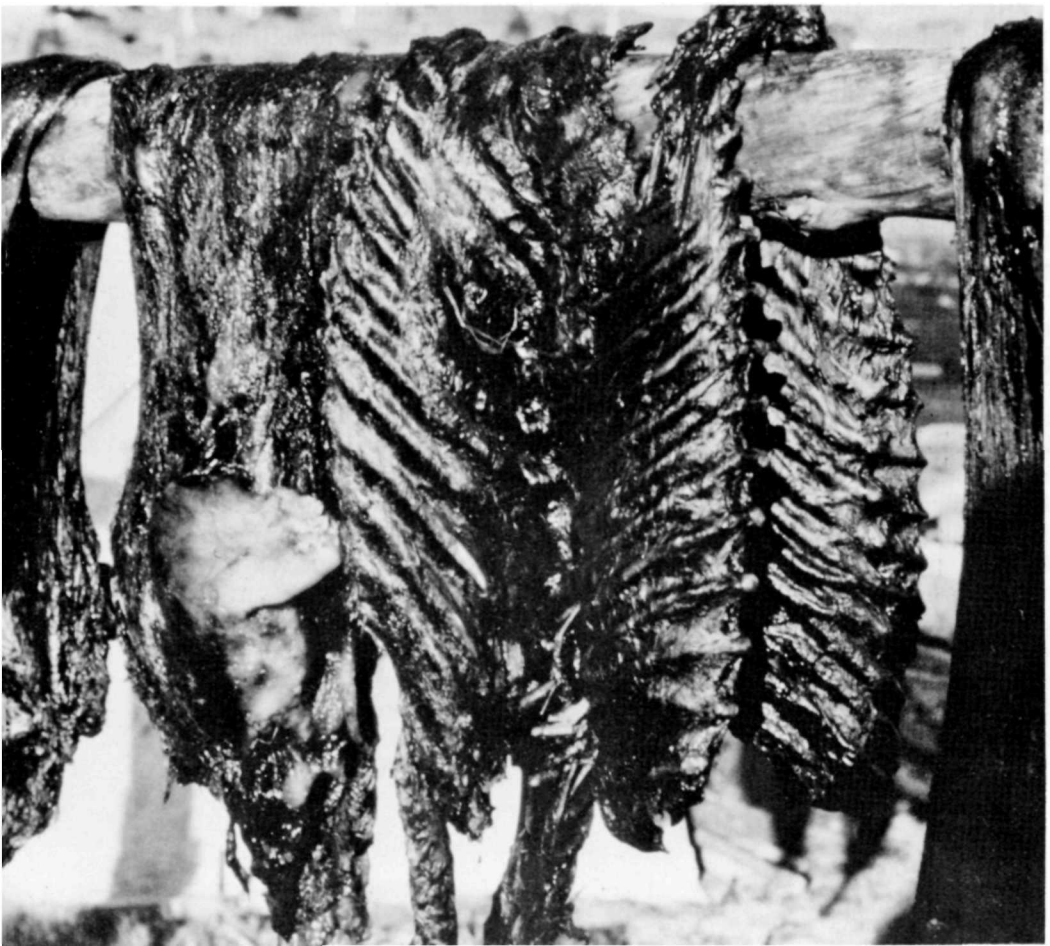
preserve travel long distances to visit other villages, to hunt, fish, and trap, and to herd reindeer.

SURFACE TRAVEL during the winter in this area is by snowmobile, and people do not hesitate to set out on a hundred-mile journey in the cold darkness. People nearest the preserve live in two villages—Shishmaref, located on a barrier island on the Bering Strait, and Deering, at the mouth of a river that flows into Kotzebue Sound. Deering has a population of about eighty, and Shishmaref, about three hundred; most are Eskimo.

Subsistence hunting, fishing, and gathering are very important to the people of these two villages. For thousands of years their ancestors have lived off the land and sea, including that which is to be within the preserve. Beluga whales, *ugruk* seals, some walruses, and salmon come from the sea. From the estuaries, streams, lakes, and the land come salmon, whitefish, tomcod, moose, tundra hares, fox, geese, ducks, cranes, and an occasional wolf, grizzly, or wolverine. About ten polar bears have been taken each recent winter by Shishmaref hunters when the bears wandered in off the frozen sea. Hundreds of pounds of berries and greens are gathered during the summer months.

Nowadays people from Shishmaref set out to sea from the village or from springtime camps along the coast to kill the *ugruk* seals upon which much of their winter diet depends. In the past they used skin boats and wooden paddles, but now they use boats constructed of marine plywood and equipped with outboard motors. However, the stalking, killing, and recovery of the seals demand the same kinds of traditional skills as before. In the early summer at Shishmaref I have walked among scores of wooden racks laden with the almost black drying seal meat.

A continuing way of life directly dependent on the land and the sea exemplifies man's accommodation to the harsh environment in this area ever since the first hunters stalked their prey across the Bering Land Bridge. Above, a woman in the tiny village of Shishmaref boils a pot of walrus flippers, while racks of ugruk *seal meat dry in the sun (below left). Semidomesticated reindeer also supply meat to villagers, and the antlers are cut (below right) for sale in the Orient.*



PHOTOGRAPHS BY T. STELL NEWMAN, NATIONAL PARK SERVICE

Fat and oil are important to Arctic residents to supply the high caloric demands of the human body in such cold weather. Many gallons of seal oil are rendered each year by an ancient use of solar energy—the summer sun beating down upon chunks of seal fat placed in sealskin "pokes." This seal oil is highly valued as part of almost every meal, especially during the winter. Cooked pieces of meat are dipped in the oil before being eaten, and the oil is mixed with berries or green plants. Seal oil does not have a fishy taste; although I cannot eat much of it at a time, I could get used to the flavor.

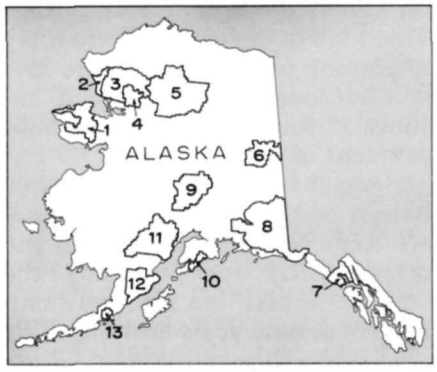
The people consume meat in large quantities, be it fish, reindeer, or seal. Side dishes of potatoes or vegetables are also eaten, but the meat is most important. Breakfast is my favorite meal in the villages because it invariably consists of huge stacks of sourdough pancakes and slab bacon swimming in its own bowl of bacon fat. The bacon fat, canned butter, and syrup are liberally spread over the pancakes and consumed with volumes of dense black coffee.

Subsistence activities will be permitted to continue in the new preserve; to halt these activities would grievously affect the residents of Shishmaref and Deering, who for generations have depended upon these resources. Moreover, the preserve is in great part a cultural preserve; because these subsistence activities are the modern exemplification of the age-old lifestyle, they are central to the purposes of the preserve. Of course, care must be taken to ensure that the natural resources being taken are not endangered and that other legitimate uses may take place.

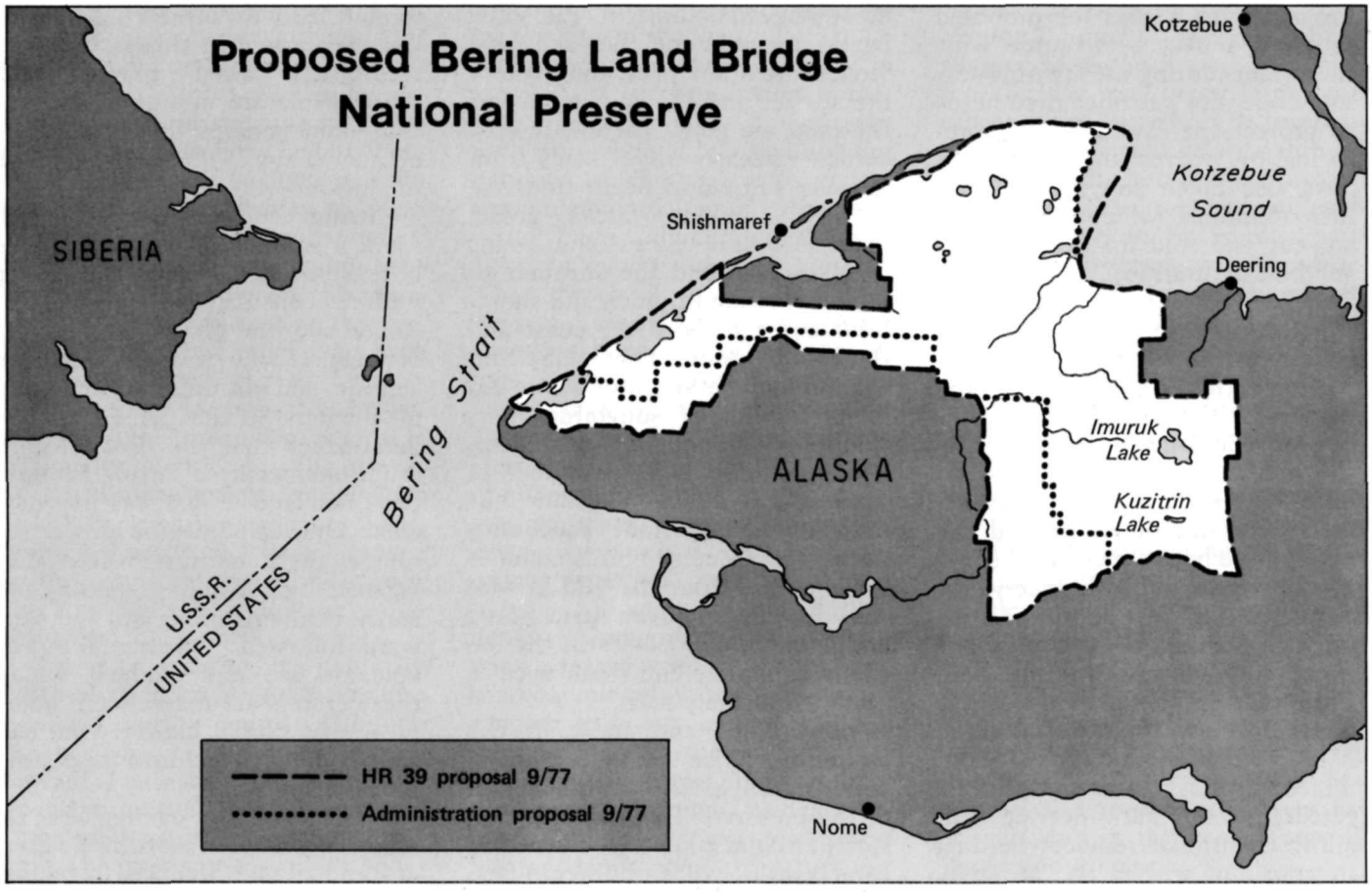
THE NATIVE PEOPLE depend not only upon the wild resources of the land and water but also upon meat supplied by semi-domesticated herds of reindeer. Three herds, totaling about eight

NPS PROPOSALS IN ALASKA

1. Bering Land Bridge National Preserve
2. Cape Krusenstern National Monument
3. Noatak National Preserve
4. Kobuk Valley National Park
5. Gates of the Arctic National Park
6. Yukon-Charley National Preserve
7. Glacier Bay National Park
8. Wrangell-St. Elias National Park
9. Mount McKinley National Park
10. Kenai Fjords National Park
11. Lake Clark National Park
12. Katmai National Park
13. Aniakchak National Monument



FEDERAL GRAPHICS



thousand animals, graze within the proposed preserve boundaries. The herds are privately owned by native herders living in Deering or Shishmaref, who sell reindeer meat to the other people in the village for about $1 per pound. In comparison, a frozen chicken in the village stores sells for over $7, and hamburger is more than $3 per pound. In addition, hundreds of pounds of meat are distributed by the herders to villagers as payment for their labor during herding activities. This kind of payment is extremely important in a village where few jobs are available, because it ensures a source of food without payment of cash.

I was named the Park Service liaison with the Reindeer Herders Association in 1976, with the responsibility for becoming the Service "expert" on reindeer herding. For several years now I have attended meetings of the Association and have participated in the herding activities within the proposed preserve. I have spent time with the herders during the fawning season while they patrolled their herds to protect the fawns against predation by wolves and grizzlies. I have also taken part in the summer roundups when the antlers are cut and sold for the Oriental aphrodisiac market.

Perhaps my most vivid memory of herding is of the midwinter week I spent participating in a butchering operation. I lived with the herders in their isolated camp far out on the barren tundra, using the outdoor privy, which had no front or roof and had a quarter-inch-thick rim of ice around the hole caused by the melting of snow by a succession of once-warm buttocks. As I became more familiar with herding, my romantic notions of reindeer, stemming from Christmas folklore, were dashed. Instead, I saw them as crucially needed meat stored on the hoof for feeding Shishmaref and Deering. Naturally, the Park Service will allow traditional reindeer herding to continue within the preserve.

ROBERT BELOUS, NATIONAL PARK SERVICE

T. STELL NEWMAN, NATIONAL PARK SERVICE

In summer, waterfowl, shorebirds, and songbirds swarm to the Arctic to breed. A nest on a narrow ledge of a Bering Sea cliff is home to this young kittiwake. Far inland, the author's daughter Nancy examines a mysterious cairn built by prehistoric Eskimos, one of many such cairns erected on the rims of cinder cones near Kuzitrin Lake. Their purpose is unknown.

IN THE SPRINGTIME the darkness of winter changes to almost perpetual sunlight; the snow begins to melt and the lakes and streams to thaw. Yet, long before the sea ice and the snowbanks on the land are gone, the entire area comes vibrantly alive. Birds from all over the world begin to arrive in vast numbers: ducks, geese, brant, sandhill cranes, and swans wing in to spend the summer in the wet lowland tundra, and shorebirds come to both the coast and the upland tundra. The upland tundra also is the summer home for many species of songbirds. This birdlife is nationally significant, partly because of the number of ducks and geese produced here, but even more important because a number of species of birds come to the preserve from the Old World: Asia, Europe, and even Africa. This is one of the few places in the nation where these Old World species may be routinely seen.

Melting ice and snow in the springtime also reveal unusual crater lakes in the northern part of the preserve. These almost perfectly circular lakes were formed by cataclysmic volcanic steam explosions that ripped square miles of soil from the earth's bosom, later to be filled with clear, cold waters. Craters formed in this fashion are technically called "maars," and these maars are unique in the nation—and perhaps in the world—because many of them were formed in pairs.

During the summer of 1976 I spent a week camped next to one of these maar lakes while working with a consulting geologist, Dr. Robert Forbes of the University of Alaska, who was studying the genesis and nature of the maars for the Park Service. Dr. Forbes has determined that the last volcanic eruptions occurred during the last time the land bridge was in existence. One can imagine the terror of the early hunters when such gigantic explosions shook the earth, throwing rocks and soil skyward, followed by heavy fallout of volcanic ash and cinders. Today these craters are magnificent lakes of almost unreal clarity. One can see hundreds of feet into the depths of the azure water.

Other volcanic events left remains of a different sort in the eastern end of the proposed preserve. Outpourings of many square miles of viscous lava may be seen there. Walking the Imuruk lava field reminds me of the hundreds of miles I have walked on Hawaiian lava fields doing archeological survey work, for the lava types are similar. Yet, unlike Hawaii, here are few lava tubes or caves you can crawl into; although they are present, they are filled with dense, permanent ice. Lichens and mosses have begun to grow on this lava, but in a natural succession that has taken thousands of years to begin to reach the richness of plant life that requires only a few decades in Hawaii. The Imuruk lava area is nationally significant, because it is the northernmost major lava field in the nation, and the harsh Arctic conditions have caused many fascinating variations in both the lava and the vegetation growing on it.

In and around the lava fields are cultural remains of early Eskimo caribou hunting camps. Although no caribou have lived on the Seward Peninsula for a century, at one time their herds must have numbered many thousands, judging from the quantity of caribou bones at these camps. The camps were probably used seasonally, with the Eskimos living along the seacoast for the rest of the year.

Not only are there remains of storage pits and house sites in this area, but tall stacks of volcanic rock were erected by these ancient Eskimos on the tops of several of the cinder cones. I hiked to the summit of Twin Caldera, near Kuzitrin Lake, to take a closer look at the dozen or so of these cairns that we could see on the skyline. After spending more than an hour threading our way through fields of broken lava, we finally reached the low crest of the old cinder cone. Here we found cairns of all sorts of shapes and sizes constructed of stacked slabs of flat lava. Some cairns were only a yard high, but others were well over ten feet in height. All were covered with a dense covering of mosses and lichens. Several guesses have been made about why they were built, ranging from the usual "religious structure"—the most ready explanation for something we don't understand—through navigational aids for use on the featureless winter landscape, to structures used for channeling caribou herds into areas where they could be more readily killed. I don't know what they are, and neither does anyone else. But this lack of understanding doesn't detract from their significance; in fact, their mystery may enhance their value.

Kuzitrin Lake is a beautiful place, clear and cold, with a glistening sand beach. Other lakes in the area are also beautiful, but the visitor must be wary. Parts of the shorelines of many of them are inches deep in green goose dung. Such lakes are a favorite place for summering geese, particularly Canada geese, because they can easily escape predators during the times they are molting and flightless.

THE VALUES of the proposed Bering Land Bridge National Preserve are many: Arctic lava flows, paired maar lakes, prehistoric Eskimo sites, large waterfowl populations and good habitat, Old World species of birds, and a continuing human lifestyle long adapted to use of the land and the sea. By far the most important aspect of the preserve is its internationally significant relationship to the prehistoric Bering Land Bridge. If approved, the preserve will set aside, protect, and interpret a part of this land bridge and the immense paleontological deposits there that can teach us about its plants and animals, its climate, and its people.

At this gateway to the New World the human history of the Americas began. The Bering Land Bridge National Preserve will provide the starting point for interpreting the history of our nation and for commemorating the fundamental contribution of the first people in the New World—the Indians of the Americas. ■

As the National Park Service anthropologist charged with studying the proposed Bering Land Bridge National Preserve, Dr. T. Stell Newman has traveled and studied extensively for several years in that remote area of the Seward Peninsula.

As the price of fashionable otter-skin jackets rises, the once carefree existence of the river otter has become a struggle for survival

by GRETA NILSSON & ANNE STEUART VAUGHAN

A Turning Point for the River Otter

HUGE CYPRESSES covered with Spanish moss are casting long shadows over the quiet waters of Georgia's Okefenokee Swamp as our boat drifts soundlessly through this primeval landscape. Winter brings a slight chill to the clear air. Warblers fly southward, and alligators crawl into their dens to wait for spring. A small splash breaks the stillness. Inquisitive eyes peer out of the water, examining us closely. An instant later the brown furry head disappears, only to reappear twenty feet away to gaze at us even more intently.

Thus began our captivation with one of America's least observed but most intriguing carnivores—the river otter. Because this shy, charming animal has been neglected by authorities and misunderstood by sportsmen for so long, it is only fitting that we should now take a long, searching look and give the otter the respect and protection that it deserves.

THE MOST PLAYFUL member of the Mustelidae or weasel family, the river otter *(Lutra canadensis)* has a lithe and muscular body well adapted to its aquatic existence. Its lustrous, waterproof, and heat-retentive fur ranges from light tan to deep sable. Length varies from three to four and a half feet, with males tending to be larger. A long, slender body ends in a powerful tapered tail, which serves as an excellent rudder while swimming and a prop while standing on land. Short legs, giving the deceptive appearance of awkwardness, propel otters on land in a rapid, hunched gait. Weights average fifteen pounds for females and eighteen pounds for males. Webbed feet add speed to its rapid underwater grace, and its long whiskers sense prey even in murky water. The otter has a streamlined head—broad and flat—a set of pointed incisors used for tearing and cutting mollusks as well as fish, and canine teeth well-equipped for holding slippery eels.

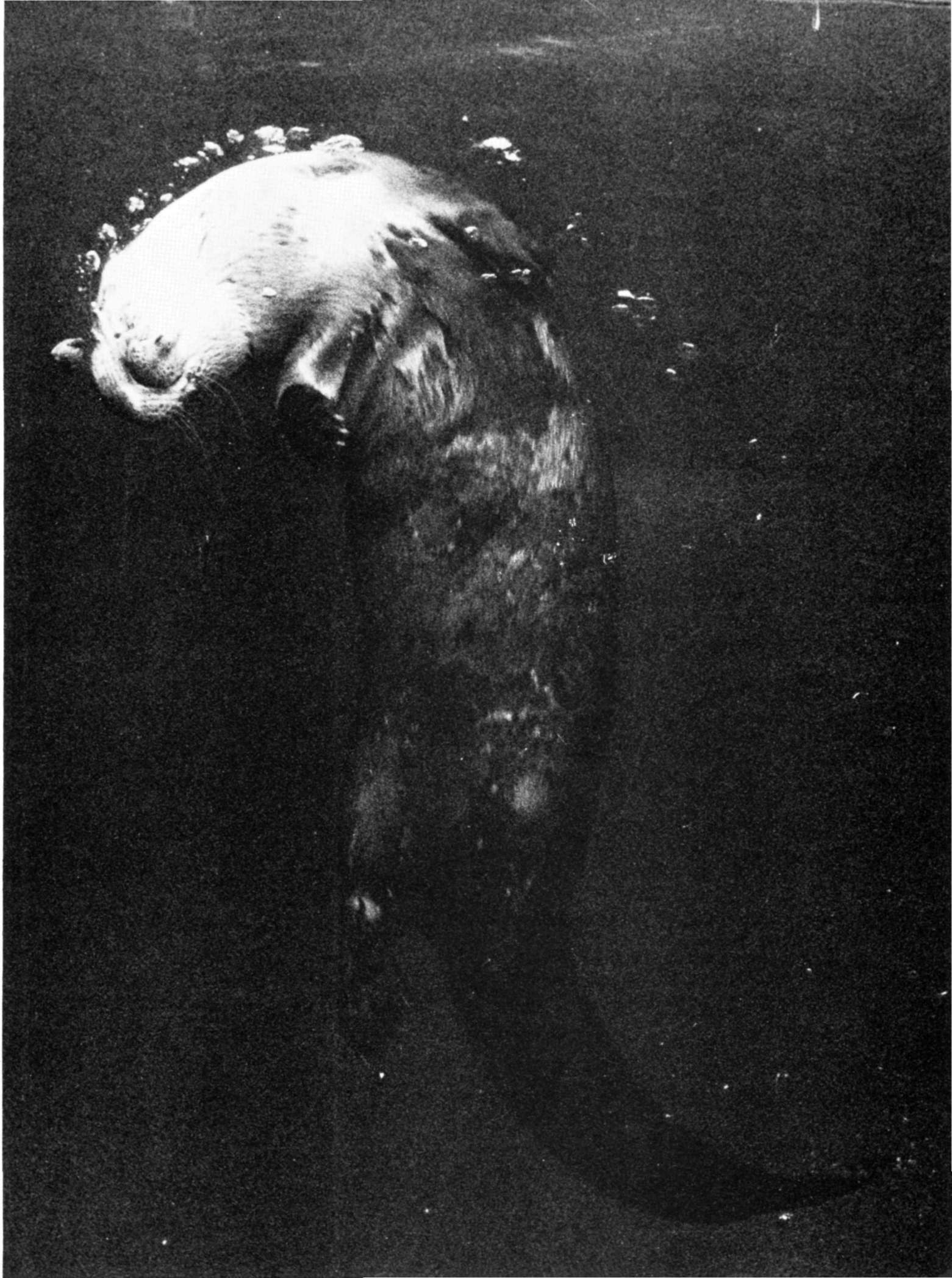
Although the otter is perfectly adapted to finding and seizing aquatic organisms, it has coevolved with its prey; the fastest trout and salmon can elude it, so slower species and injured specimens comprise the bulk of its diet. Thus, otters play the beneficial role of all predators, thinning out overpopulated species and thereby ensuring the survival of the swiftest and fittest. Fishermen, nevertheless, have traditionally held the otter in low esteem because of its alleged depredations on game fish. In many areas of Europe, otters have been deliberately exterminated.

These prejudices were proven to be unjustified when biologists, through field observations and carcass studies, showed that game fish made up only a minor part of the otter's diet. As early as 1942, biologists Lagler and Ostenson found that Michigan otters consume as much as 36 percent forage fishes (suckers, minnows, madtoms, mudminnows, darters, muddlers, and sticklebacks). Other diet items are 25 percent amphibians, 23 percent game and pan fishes (trout, bullheads, northern pike, perch, bass, and sunfish), and the remaining 16 percent invertebrates and other food items. Furthermore, the size of the food tends to be small—five to nine inches—not the large fish that fishermen seek. In areas where crayfishes are abundant, 30 percent or more of the diet is composed of these invertebrates, which may be the otter's favorite food. In test experiments, they select crayfish over trout. Even blueberries made up a portion of the summer diet of Massachusetts otters in a 1964 study.

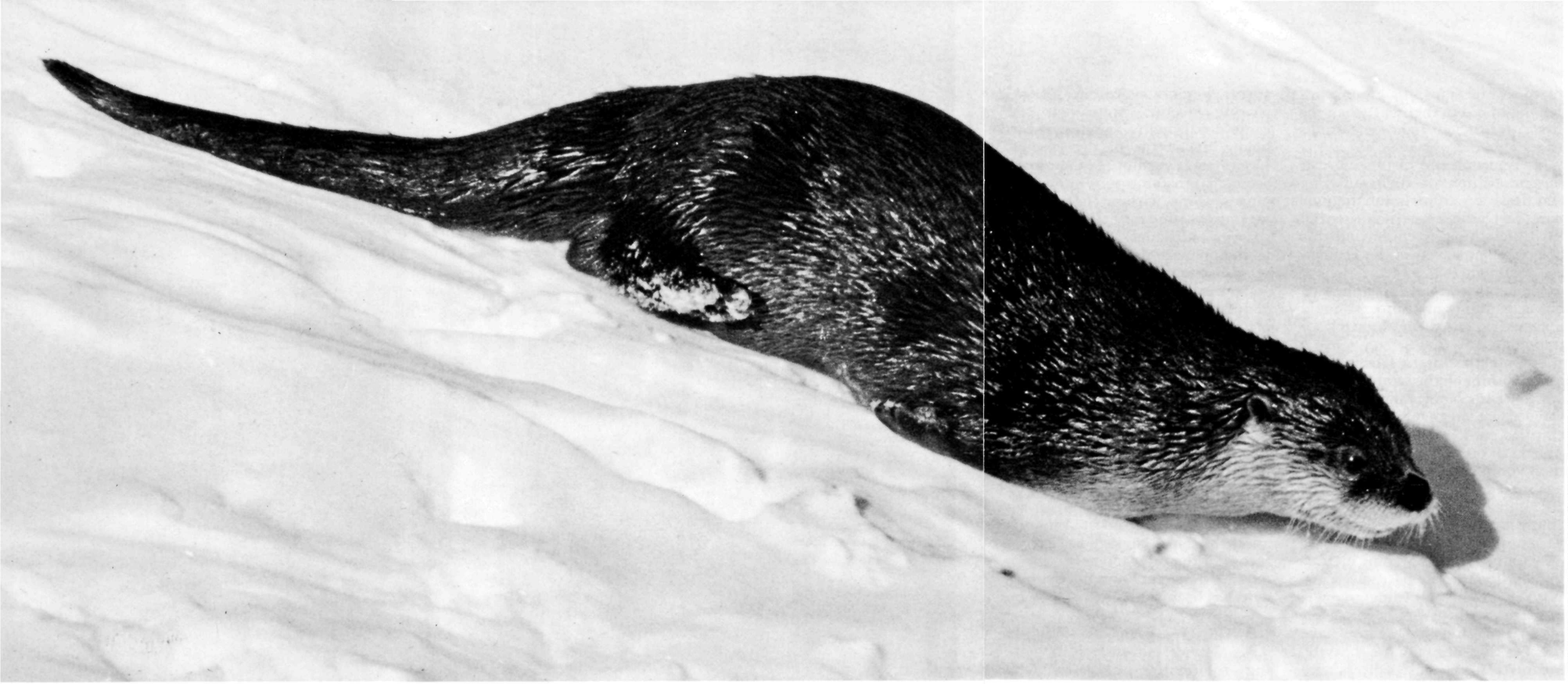
CATCHING ITS FOOD is an easy feat for *Lutra canadensis*, leaving most of its time free for other pursuits. Playfulness is the trait most remarked by naturalists from early times. The otter may be the only land animal that spends the majority of its adult life in play. C. J. Harris described typical games in *Otters*:

> An otter alone will choose a small pebble, carry it to the water, swim out and drop it; before it can reach the bottom, the otter will dive and come up underneath the stone and catch it on the flat top of its head. It will then indulge in a series of underwater acrobatics—continuing to balance the stone on its head. Otters together will wrestle, play tag, and duck each other in the water, and communally form slides down steep, muddy banks, and spend hours sliding.

Playing pranks on other animals is another favorite sport. While carrying branches to its lodge, the stolid beaver occasionally finds its tail pulled by mischievous otters. "Juggling is done with a grace and ease that is amazing," notes Ed



UNDERWATER BALLET; PHOTO BY ED PARK



SLIDING IS A FAVORITE GAME OF OTTERS; PHOTO BY ED PARK

Park, a long-time observer of otters and author of *The World of the Otter*. "Watching a family of otters play keep-away with a piece of wood, churning a pool to a froth with their spirited game, is to view one of nature's finest shows."

The curiosity that led our otter acquaintance in Okefenokee to want a second glance at us is another characteristic trait. Coupled with the otter's curiosity, however, is a natural wariness, making it an elusive species, even for keen-eyed and persistent observers. Imaginative play, inquisitiveness, and caution when faced with the unknown are appealing manifestations of the otter's intelligence.

Family groups of cavorting otters usually are composed of females with their half-grown young; males and females tend to lead separate lives except in breeding season. Breeding does not take place until the female is at least two years old. Mates are chosen on the basis of individual preference, rather than availability. Many zoos have placed otters together in the hope of producing young, only to have the female reject the male for reasons known only to herself. Emil Liers, who raised many otters in Minnesota, noted that forty-six of his males never were able to breed, and, in general, male otters cannot be counted as successful breeders until they are at least five to seven years of age.

A process known as delayed implantation occurs in North American otters: fertilized eggs may remain unattached to the uterine wall until the conditions are conducive; then the eggs become attached for a gestation period of several months. This phenomenon may be an evolutionary adaptation to compensate for cyclic droughts. In the wild, mating often occurs just after the young are born in spring, and implantation takes place nine months to a year later.

Dens are dug in river banks or under tree stumps, often with several passages. Generally two or three pups are born in a litter, but occasionally as many as five are born. Females keep the males from the den until the young are weaned. When the pups emerge from the den with their mother for a first tentative swim, the male otter usually is allowed to join the family group; and from then on he aids in catching food and training the young. Both parents will defend the pups fiercely and will come to the aid of their mate if threatened by dogs or man. One biologist in California even observed a male otter who took charge of the half-grown pups when the mother was killed in a trap.

When the young have become fairly independent, the male otter leaves the family group to begin his wandering. Loping on land and swimming in rivers as far as fifty miles or more in the course of a year, otters require many square miles of habitat. Southern swamps and marshes support higher densities of otter than northern beaver ponds and creeks. In drier environments, such as parts of Arizona and Nevada, where many creeks dry up in the summer and river diversion has eliminated former habitats, otters require at least seventy square miles in order to survive.

WHEN Lewis and Clark explored the continent, otters were abundant wherever a year-round source of water provided food. Only certain portions of the arid Southwest would not support populations of this adaptable animal. Highly successful in adjusting to harsh climates, variable food supplies and habitat, the otter has been defenseless against its only adversary—man. Civilization has brought traps and guns, polluted water, and massive destruction of habitat. Today the otter's range has shrunk to less than a third of its original distribution in the contiguous forty-eight states, and its future survival in many parts of its remaining habitat is uncertain.

Intensive trapping by the Hudson Bay Company and other fur interests in the eighteenth and nineteenth centuries depleted otter numbers in many states and caused its virtual disappearance in several others. Kansas, Nebraska, South Dakota, and North Dakota have not had reports of river otters since the turn of the century (except for a single road-killed specimen in extreme northeastern North Dakota in 1974—probably a wanderer from Canada). The early fur records show an average of several hundred otters trapped in these Plains states annually until the late nineteenth century. Neighboring Colorado and Utah had otters until the 1950s, when the combined effects of unregulated trapping, habitat loss, and perhaps strychnine baits used in predator control eliminated them.

The species disappeared along with the beavers that were overtrapped in the nineteenth century to make gentlemen's hats. Beavers now have reoccupied most of their former habitat, but otters remain absent in the central United States from Kentucky and Tennessee west to California and Montana, with the exception of a forty-mile stretch of river in southern Missouri and an uncertain population number in Arkansas.

Massive industrial pollution of many large rivers and lakes has killed fish and invertebrates that otters need for survival and may have killed many otters indirectly through food contamination. In *The World of the Otter*, Ed Park considers water pollution and pesticides major threats to the future survival of the otter. Such pollution, in combination with overtrapping, has eliminated otters in the midwestern states of Ohio, Illinois, Indiana, and southern Michigan. Acid drainage from coal mining extirpated populations already reduced by trapping in the Appalachian states of Kentucky, West Virginia, Tennessee, and most of Pennsylvania.

Additional habitat loss has followed the draining of marshes, an activity that has eliminated an estimated 50 percent of the wetlands in the United States in the past century, according to inventory studies by the U.S. Fish and Wildlife Service. In addition, channelization projects of the Soil Conservation Service and the Bureau of Reclamation have reduced hundreds of rivers and creeks to sterile ditches, devoid of spawning habitat for aquatic organisms. In states bordering the east and west coasts and the Gulf of Mexico, the otter has fared slightly better, although it has declined from original numbers; but trapping still is permitted in many of these states.

NEW FASHION DEMANDS have resulted in a resurgence in trapping similar in intensity to that of the nineteenth century. In the United States, otter jackets now sell for $3,500. But much of the demand originates outside the country. Pelts of 95 percent of the otters trapped here are exported to European fur markets and elsewhere to be marketed at luxury prices. The recent rise in value of otter pelts from $25 to a high of $80 has caused an increase in the number of amateur trappers.

Most trappers today work part time or on weekends. They take otters in Conibear traps and in steel-jaw traps set both in the water and on land. Conibear traps are intended to kill instantly with a sharp blow on the head; but in practice, otters often are wounded and suffer lingering deaths from the injuries sustained. Drowning sets, placed underwater to take both otter and beaver, seize the animal in steel jaws and hold it until it drowns. For an otter, death can take as long as five minutes. C. J. Harris described the otter's reaction to on-land trapping: "When otters are together, they will cooperate to help each other. This habit is taken advantage of by trappers who will place several traps in a group, thus hoping to add to their bag when the first otter to be caught calls others to its aid."

Many people are distressed over the imposition of such suffering and death on animals for the purpose of producing nonessential luxury clothing. Even beyond this objection, however, is the ecological argument that a species whose exact population status is unknown but is declining in numbers should not be exploited by hunting or trapping.

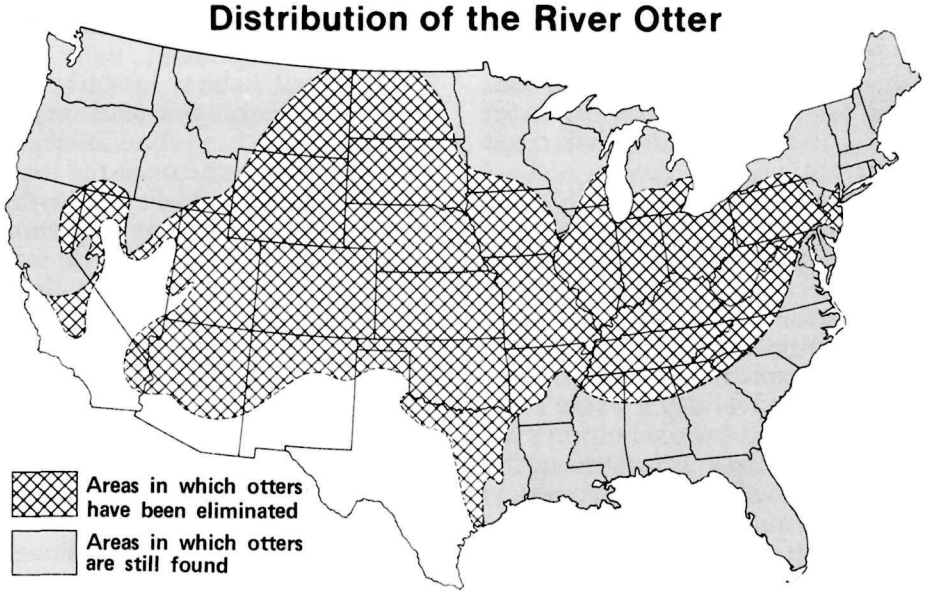
Trapping begins in late fall and extends through the winter in most states. Thus, most adult females trapped are pregnant, so two generations are lost when females are killed. If otters are trapped after their young are born and the female has mated again, *three* generations are killed because the newborn young die along with the following year's unborn pups.

The situation has become increasingly critical in the past few years. With the rise in pelt value, trappers in states such as Louisiana, Florida, Maine, and Washington have been taking otters more heavily. Meanwhile, because otters are trapped in smaller numbers than muskrat or beaver and thus constitute a minor percentage of furbearing revenue, state fish and game departments have tended to ignore the status of the species. Most states have limited their management programs to winter trapping seasons without bag limits, tagging systems for pelts, or status surveys. Although Maine formulated a management plan based on otter distribution and numbers, the state has allowed trappers to trap 25 percent more otters than the plan recommended. California, by contrast, conducted a status survey in 1975 and found that because of the otter's limited distribution and numbers in the state, the species deserved continued protection. Colorado has reintroduced otters, making it the first state so far to import otters for release. In 1976, nine live-trapped otters from Newfoundland and Oregon were set free in Colorado. West Virginia, another state having no recent record of the otter, plans a reintroduction program, but no definite date has been set.

THE U.S. Fish and Wildlife Service currently is reviewing information submitted by states and is considering proposing the river otter for listing under the Endangered Species Act of 1973. Federal listing would be a positive step toward ensuring its survival, but trapping interests and many state game departments have expressed great opposition to the idea. Because of the otter's shyness—which probably has increased as a result of persecution from trappers and fishermen—unobserved populations may still exist in areas where the species is presumed extinct. Federal protection under the Act could help to ensure that its habitat is not destroyed and might provide a means to limit trapping in areas where its numbers are being depleted.

Because of the demand for otter furs overseas, however, curbs on exports of pelts also are needed. The subfamily Lutrinae—or the otters—has been added to Appendix II of the Convention on International Trade in Endangered Spe-

Distribution of the River Otter



cies of Fauna and Flora. This convention requires member nations to monitor or restrict trade in listed species. The Endangered Species Scientific Authority (ESSA), an interagency committee assigned to advise on imports and exports of convention species, proposed in August 1977 an export quota of 11,315 otter pelts for the season of 1977–1978 from seventeen states. In late November 1977 the International Association of Fish and Wildlife Agencies threatened legal action against ESSA, demanding unlimited quotas. Shortly thereafter, ESSA began revising quotas upward; otter exports are now set at 27,325 from twenty-three states, plus an unlimited number to be allowed from Alaska. This figure represents more otters than have *ever* been trapped in the United States yearly, since records were first kept by the Department of the Interior. Recently, total annual harvests have averaged from 11,000 to 15,000. Agreements have been reached with some states requiring tagging systems so that actual numbers of otters trapped may be ascertained, but status surveys and habitat studies have not so far been required for export. Figures supplied by states for the 1975 season may have been inflated in attempts to receive high quotas from ESSA. Implementation of this high quota is almost certain to deplete the dwindling populations of otters.

LET US HOPE that this appealing animal will receive the protection—long overdue—that is essential for its continued existence in the wild. The river otter needs the sanctuary of undisturbed and unpolluted waters. As a carnivore at the apex of the food chain, its presence then not only would reflect the general health of its environment, but also would be a living symbol of the successful management and humane stewardship of America's fauna. ■

Greta Nilsson is a Research Associate with the Institute for the Study of Animal Problems of the Humane Society of the United States. She spent two years researching the status of the otter and wrote the petition requesting its listing under the Endangered Species Act of 1973. She is currently continuing research on both the otter and predator control.

Anne Steuart Vaughan is a freelance writer dedicated to wildlife preservation.

Message to Members

You Can Help the Otter

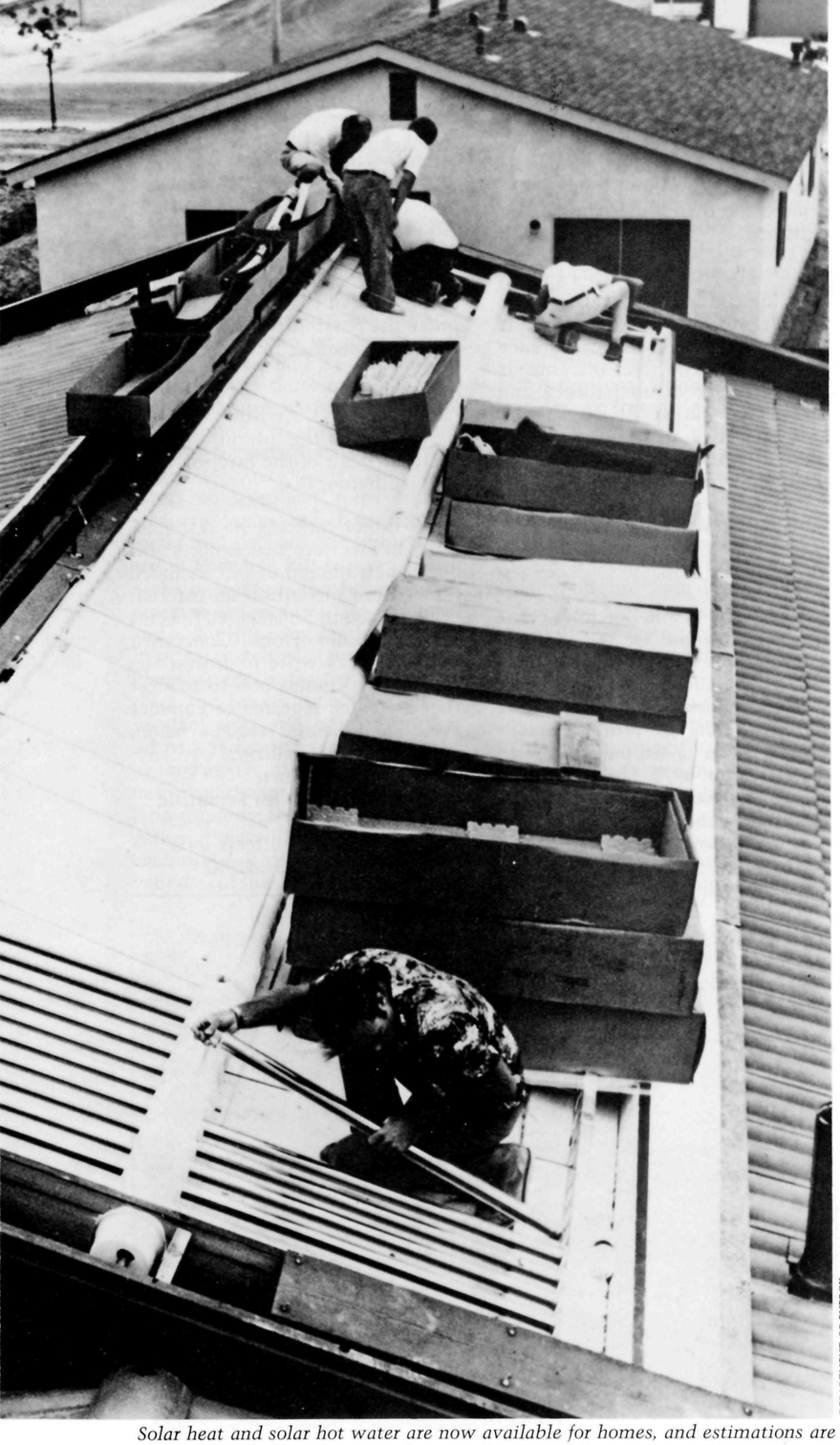
Letters to the Secretary of the Interior endorsing the listing of the river otter under the Endangered Species Act of 1973 will greatly improve the possibility of federal protection. Specific information on local status should be included if possible.

Hon. Cecil D. Andrus
Secretary of the Interior
Department of the Interior
Washington, D.C. 20240

ESSA is not meeting its responsibility to ascertain that exports will *not* be detrimental to species listed under the Convention on International Trade in Endangered Species of Fauna and Flora. Concerned members may write to protest the high export quotas and to request that states be required to conduct status and habitat studies before export of pelts is allowed.

Dr. William Brown
Endangered Species Scientific Authority
Eighteenth & C Streets, NW
Washington, D.C. 20240

THE RIVER OTTER NEEDS PROTECTION; PHOTO BY ED PARK



DEPARTMENT OF ENERGY

Solar heat and solar hot water are now available for homes, and estimations are that the market will be expanding rapidly during the next several years.

The plentiful and endless energy from the sun can provide the answer to the fuel shortage

by KENNEDY P. MAIZE

ENDLESS ENERGY: The Long and Short Range of Solar Power

THERE IS NO energy shortage. There is a fuel shortage. Remember that crucial distinction as you hear about the President's energy program, the Department of Energy, and the comings and goings of Energy Czar Jim Schlesinger.

In the past we have confused the distinction; we have identified energy as fuel. It's an understandable error. After all, for most of the past hundred years, fuel seemed inexhaustible, providing endless energy. Dig down deep enough nearly anywhere in the world, it seemed, and you would find coal or oil or natural gas. The abundance of fossil fuels led to a discover-dig-and-burn mentality about energy.

But no more. First, the oil countries (read Arabs) realized the oil companies (read Americans) were pumping the pools of crude dry to supply the oil addicts (read Western Civilization) with a cheap fix. The oil countries took control of their only economic asset, and the price of oil did what it had to do—it went up. Next, all the nations of the world began realizing what fuzzy-headed folks called "environmentalists" had been saying all along—fossil fuel is a finite resource. Now, the President tells us there just isn't much oil left anywhere in the world. At best, we are going to have much higher fuel prices. At worst, we are going to run out. There is a crisis, and the President calls for an attack against it with the moral ferocity of war.

But remember, energy is not necessarily fuel. An endless supply of energy falls on the earth every day. In fact, it is the source of the energy in fossil fuels. It is sunlight.

THE SUN, to turn a phrase, is now the hottest topic in the energy field. It has always been there and was a major source of some forms of energy in ancient times. With fuel prices artificially low, no incentives have existed to develop ways to capture the sun's energy. But those incentives have finally arrived, wearing burnooses; and work is now going at a rapid pace to learn how to harness the power of the sun. Compared with the alternatives—dangerous nuclear plants and dirty coal plants—the sun seems the first choice for the energy for the future.

The amount of energy the sun provides is simply enormous. The energy that beams down on Lake Erie in one day is more than the United States consumes in a year. In theory, the sunlight falling on 10 percent of the farmland in the United States could meet our total energy needs today. The sunlight falling on just four square miles could equal the maximum output of the giant coal-fired dinosaur at Four Corners, New Mexico. Over its thirty-year life span, more than forty square miles of land will be stripped bare to feed this monster its daily diet of coal.

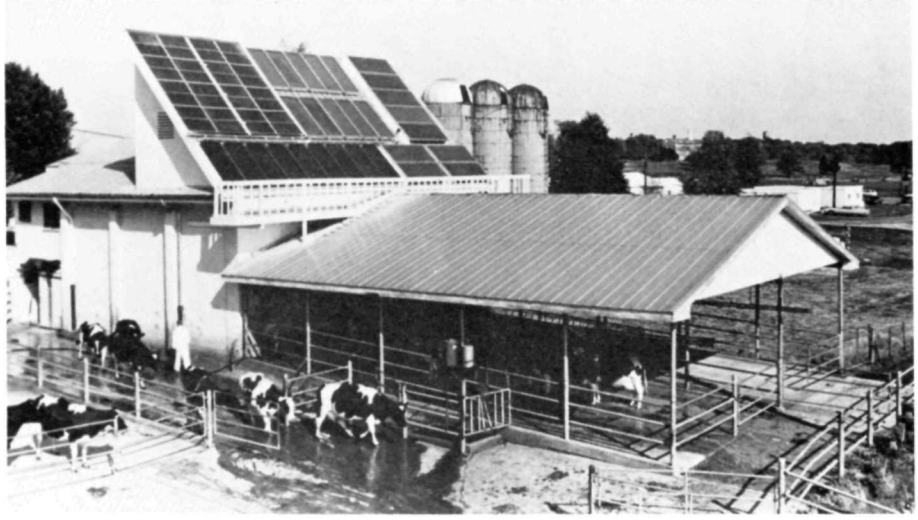
Although sun power is clean, widely distributed, endless, not subject to import duties and quotas, and not amenable to control by monopolies, it is of low density at ground level and also subject to cycles of day and night and variations in geography and location. The current activity in the field attempts to take maximum advantage of the good points while finding ways to cope with the disadvantages. This approach has been the thrust of all attempts to use the sun since ancient days. Xenophon in *Memorabilia* quotes Socrates as saying, "Now in houses with a south aspect, the sun's rays penetrate into the porticoes in winter, but in summer the path of the sun is right over our heads and above the roof, so that there is shade. If, then, this is the best arrangement, we should build the south side loftier to get the winter sun and the north side lower to keep out the cold winds." It is a classic statement of the principles of solar heating.

Socrates may have been the first person to think analytically about the solar aspects of heating and cooling. Currently a lot of engineers, architects, building contractors, business leaders, and even bureaucrats are thinking seriously about it.

Full-page ads in the *Wall Street Journal* proclaim it: "The Answer to OPEC Comes Up Every Morning," says an ad for the solar division of Grumman, an aerospace giant. Magazines have entered the market to inform readers about solar heating and provide a marketplace for the increasing number of products: *Solar Age, Solar Engineering, Solar Energy.* All seem prosperous. Trade groups such as the Solar Energy Industries Association, publisher of *Solar Engineering,* are flourishing. Finally, President Carter has spoken of solar energy as a major factor in his energy program, and the government is already spending $90 million to promote solar heating and cooling through demonstration programs.

THE SOLAR HEATING field is dynamic, with firms rapidly entering and leaving the market. In 1974, according to the Department of Energy, thirty-nine companies were manufacturing solar panels. By early 1975 sixty-nine companies had entered the market, and a dozen of the thirty-nine active in 1974 had dropped out of sight. More than one observer has likened the field to the early days of the auto industry. It seems to attract a generous mixture of both small inventors and big business investors.

The potential of the market explains why many industrial giants are entering the field. Northrup, Grumman, Revere, Pittsburgh Plate Glass, Reynolds Aluminum, Olin Brass—all are in the market. They are gambling that there will be big



DEPARTMENT OF AGRICULTURE

Farmers are rediscovering the use of solar power as a result of various demonstration projects. Above, at the U.S. Department of Agriculture Animal Genetics and Management Laboratory in Beltsville, Maryland, scientists are heating the wash water and the milking parlor with energy from the sun. Four types of solar collectors, operated simultaneously, are being compared for efficiency and durability. In a project being conducted by the Massachusetts Institute of Technology and the University of Nebraska at an experimental farm near Mead, Nebraska (right), solar cells will power a crop irrigation system.

Industrial applications of solar energy are hampered mainly by high costs, but research is continuing to try to reduce costs. For example, a research program (below) of the Department of Energy aims to reduce the cost of electricity from photovoltaics—the solar cells first used in the space program—to a practical level within the next ten years.

SANDIA LABORATORIES

money to be made within a few years, because some 20 percent to 25 percent of U.S. energy consumption goes to heat homes, including providing hot water. It is a multibillion dollar market.

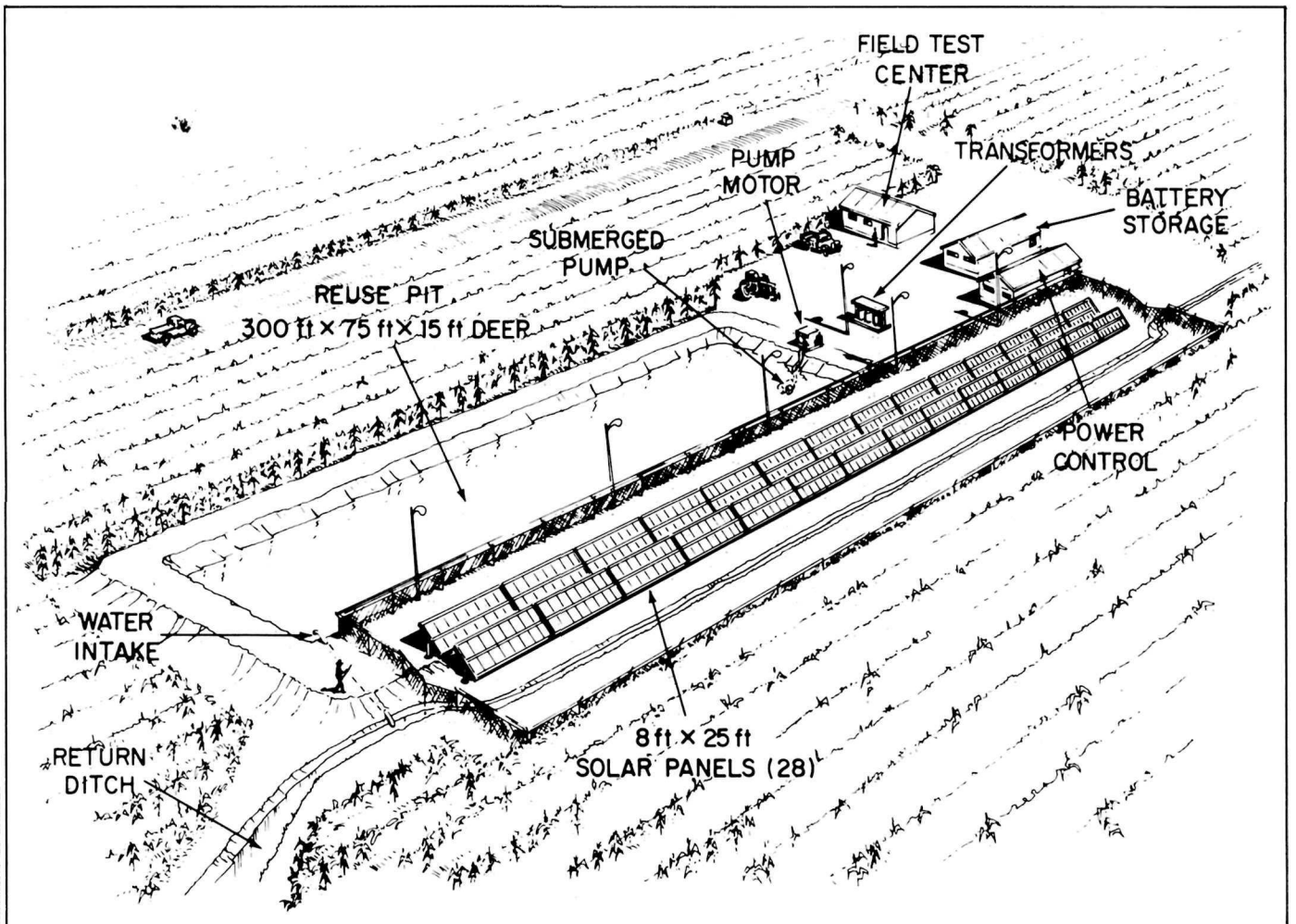
THE TWO major approaches to solar heating are passive and active. Passive systems have no pumps, blowers, or other devices to collect and distribute heat generated by the sun. They rely on construction methods and siting to make the entire house a solar collector, much as Socrates described. It is an approach that works very well, particularly in more temperate areas of the country.

Passive system concepts are also part of the design of a good active system, but the active system adds special collectors, pumps, fans, storage tanks, and associated hardware to permit a system that functions more like the central heat we are most familiar with. Most current attention focuses on active systems.

In theory, a solar collector is a simple affair. It consists of a flat metal plate—which heats up—and a method of running a fluid—usually water—over the plate to pick up the heat and put it in the house. The collector has a cover, often glass, to keep in the heat. The components are then assembled in a frame of some sort and propped on the roof facing south.

But understanding the basic principles of a solar collector is only the first step in making one. Some metals are better than others for heat transmission and corrosion resistance. The method of water distribution over the face of the collector can be crucial. Glass is breakable, heavy, and expensive; but plastics have serious limitations, also. It is, in short, the kind of field where creative engineers can provide great cost-saving benefits.

Cost is the key element in selling solar systems. An average system for an average new house in the mid-Atlantic states will cost the homeowner something around $10,000, which includes a backup system. Add some $5,000 more if



DEPARTMENT OF ENERGY

SOLAR PHOTOVOLTAIC POWER SYSTEM FOR AGRICULTURE

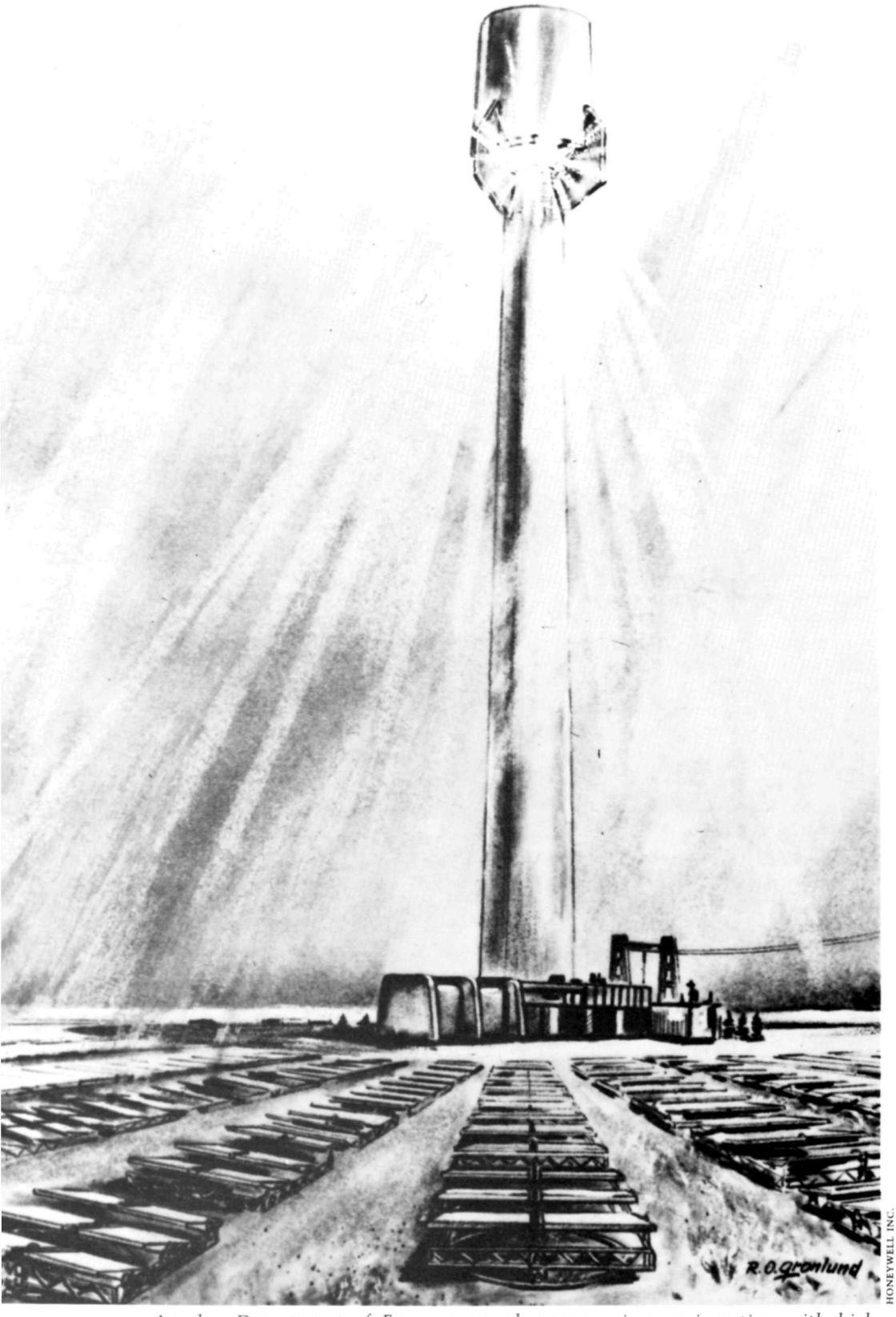
you are thinking about converting an existing house to solar heat. The solar system will provide about 70 percent of the home heating needs and 100 percent of the hot water. It is a stiff investment and one that not many homeowners will opt for easily. But as fuel costs rise, the solar system looks better and better. A recent study by the Mitre Corporation, funded by the Energy Research and Development Administration (now part of the Department of Energy, DOE), concluded that solar heat already competes with electricity in new houses everywhere in the United States. It will become competitive with oil and gas within four years, as fuel prices rise and solar collection system prices fall.

The best bargain for most homeowners is not solar heating but a solar hot water heater. If you are building a new house, by all means seriously consider solar heating. And also design the house with passive solar concepts in mind, trying to take maximum advantage of the free sunlight. But new construction amounts to only 2 percent of the nation's housing each year. If solar technology is to make an immediate impact on the energy crisis, it will do so through homeowners who install units to heat their water. The impact can be large. More than 25 percent of the average household's energy budget goes to heat water.

Unlike a heating system, a solar hot water heater can be installed in nearly any home at fairly modest cost. Most units run between $1,000 and $1,500, with installation running another $300 to $500. They can pay for themselves in five years in many localities.

A word of caution is necessary at this point. As in all other things, *caveat emptor.* Research the market carefully before you buy solar hot water heating or a solar heating system. You can get burned. The National Bureau of Standards has issued temporary industrywide standards, but their impact is uncertain, and final standards are still some time away. Be particularly careful to examine the hot water systems. Find out what kind of heating fluid they use. Those that use glycol-based antifreeze should have two separate heat-exchange loops. The heating fluid should transfer heat to a water exchanger, which should then transfer the heat to the water heater. Otherwise, deadly glycol could leak into your drinking water.

Solar heat and solar hot water are here now. Impediments to their widespread adoption are not fundamentally technological. They are politicial, social, and economic.



HONEYWELL INC.

Another Department of Energy research program is experimenting with high-technology ways to produce electricity from solar energy at prices competitive with other methods of generating electricity. In this project, mirrors will reflect sunlight to the top of a tower where water is converted to steam, which then passes through a turbine on the ground to generate electricity.

As solar power gains a greater share of the market, and as the fuel shortage deepens, it is a safe prediction that most of the impediments will fall. States will pass laws governing access to sunlight. Zoning and building codes at the local level will be amended to permit solar installations. At the national level, it is likely that during this session Congress will write tax incentives and loan guarantees for solar installations.

A DIRECT RESULT of the technology developed for heating homes with the sun is the use of the sun to generate industrial process heat and to provide agricultural heat. In 1975, according to the DOE, industry in the United States used more than 40 percent of the nation's total energy budget, most of it derived from fossil fuels. Energy consumed on the farm amounts to 2 percent of the nation's energy requirements. DOE estimates that with existing technology as much as 50 percent of farm energy needs could be provided by solar sources by the turn of the century. The government also estimates that a large, though unknown, portion of industrial process heat could come from the sun.

In neither case is the idea new or novel. Farmers have used the sun since they planted the first seed. Photosynthesis is the most powerful solar process on earth. Greenhouses, cold frames, grain driers—all have used sun power for thousands of years. But like the rest of society, farmers forgot about the sun when fuel was inexpensive. Now the DOE is using grants and contracts with land grant colleges and the U.S. Department of Agriculture to demonstrate solar grain drying and crop drying and solar-heated greenhouses, barns, and other animal shelters.

Solar industrial heat applications began in the late 1700s when the French scientist Antoine Lavoisier achieved temperatures close to 1,750° F from a solar furnace used to melt chemicals—the highest controlled temperature achieved by man to that date. During the 1800s

numerous solar engines for pumping water were developed. A large solar still in Las Salinas, Chile, built during the 1870s, produced six thousand gallons of drinkable water per day for forty years. Then cheap fuel came along, and solar-generated process heat disappeared. Now the picture is rapidly changing. The government is actively engaged in demonstrating solar power in fields and factories.

Solar heating has conquered most of its technical problems. The other major attempts to harness the power of the sun have not come that far, although all seem very promising. They are all at different stages of readiness to make a contribution to the energy crisis. In the case of two approaches—photovoltaics and solar thermal conversion—the problems are how to use technology to cut costs. Another approach—fuels from biomass—has some more basic technological barriers to hurdle. But each application offers a great potential in harnessing power from the sun.

Photovoltaics are the familiar solar cells of the space program. They are the closest to widespread application. The sun's rays, striking a thin layer of a particular chemical, can generate electricity directly. As Denis Hayes of the Worldwatch Institute describes them, solar cells "have no moving parts, consume no fuel, produce no pollution, operate at environmental temperatures, have long lifetimes, require little maintenance, and can be fashioned from silicon, the second most abundant element in the Earth's crust." But at the moment they are very costly—about $25,000 per peak kilowatt. A research program led by DOE intends to reduce this cost to $500 by 1986 and to about $300 shortly after that. At that point solar cells will be competitive with electricity generated by fossil fuel. The thrust of the government's research and development program is to stimulate the market and to lower costs by buying "a significant fraction" of the output of solar cell manufacturers; to develop ways of producing thin sheets of silicon that would lower manufacturing costs; and to look into the use of different materials and thin film coatings.

Cost is also a crucial question in another high-technology approach to sun power—solar thermal energy conversion. The concept is to collect the sun's rays through a field of mirrors that track the sun and reflect energy to a receiver mounted on the top of a tower. The receiver turns the energy into steam to drive turbines and generate electricity. It is technically feasible, and it has been done before. But the question is whether it can be economically competitive with other methods of generating electricity. There are technological problems related to costs—what kinds of mirrors will work best, what kind of guidance system should be used, how will the receiver function? But the basis of the DOE research program is an attempt to discover whether the plants can produce power at competitive prices. To this end, the government is funding a five-megawatt test project in the New Mexico desert southeast of Albuquerque and then a ten-megawatt pilot plant.

Both the solar thermal program and the effort in photovoltaics are funded out of a $204 million account in the DOE budget. Indications are that the figure will rise dramatically during the Carter Administration's energy push. The same account also funds another promising approach to solar power —fuels from biomass. This program is an attempt to turn green plants into burnable fuel.

In a sense, fuel from biomass is the most direct and familiar form of solar energy. That log burning in the fireplace is a solar heating system. The tree collected the sunlight, converted the light energy to a chemical form, and released it when you burned it. It is also the most common form of solar energy —firewood. Even in the United States, according to Worldwatch Institute director Lester Brown, firewood accounts for a greater percentage of the nation's energy than nuclear power does.

Several methods exist for turning living plants—biomass—into fuel. Anaerobic digestion of such things as animal dung will produce methane gas, which can be burned as fuel. Many towns and cities once used this method on a wide scale, turning human wastes into methane. Ram Bux Singh, an Indian engineer who works with anaerobic digestion, says the dung of one cow will produce ten cubic feet of gas per day. Energy comes in other ways, too. Cellulose can be broken down into sugars, which yield alcohol when fermented. Alcohol is a fine fuel. Microorganisms can be used to liberate hydrogen from water. Pyrolosis, high-temperature burning, can produce fuel gases and charcoal. In short, biomass offers a wide range of possibilities for fuel. Some sticky problems remain, including some related to pollution control. Costs are also significant. But it seems that this is another case where the state of the art is quite favorable for rapid development.

RAPID DEVELOPMENT is needed, of course. As Hayes concluded in his excellent study, *Energy: The Solar Prospect* (Worldwatch Institute, 1977), "Humankind is no closer today than it was two decades ago to finding a replacement for oil, and the rhetoric that public officials lavish upon the energy 'crisis' is still not being translated into action. . . . Oil and natural gas are our principal means of bridging today with tomorrow, and we are burning our bridges."

Unless we act soon, the current fuel shortage will become a permanent energy shortage. But more and more people are betting that it won't happen. PPG, Alcoa, Revere, Northrup, Olin, and a host of other companies, large and small, are betting it won't. They are all betting on the sun. ■

Kennedy Maize is a free-lance writer specializing in environmental issues. He has written for a wide variety of publications including *Environmental Action*, *Audubon*, *The Mother Earth News*, and *Organic Gardening and Farming*. He and his wife operate a small organic vegetable farm in Maryland.

NPCA at work

REDWOOD

Reprieve for the Redwoods

In some areas of the nation, the vandalism of two dozen redwood trees in California early in 1978 caught bigger headlines than the recent passage of an historic piece of legislation to protect Redwood National Park and expand it by 48,000 acres.

Even conservation organizations such as NPCA that fought long and hard for the legislation could hardly believe it when the House and Senate both passed redwoods bills recently. It would be an understatement to call conservationists' efforts an uphill battle.

Since establishment of the national park in 1968, thousands of acres of primeval coastal redwood forest had been cut in areas not included within its boundaries. Much of this acreage had been upstream and upslope from the park. Thus, conservationists have fought not only to save the areas being logged but also to save trees within the park from the increasing damage inflicted on them by the erosion and siltation that resulted from the harvesting. Proponents of the legislation had to deal with some bureaucratic timidity during the Nixon and Ford administrations and—more recently—with an onslaught of propaganda from timber industry spokesmen who couldn't see the forest for the trees.

A lion's share of the credit for protecting the redwoods must go to Rep. Phillip Burton (D-Calif.), chairman of the House parks subcommittee, who introduced the bill and worked out the provisions that ensured its passage. The legislation passed the Senate aided by the strong leadership of Senators Alan Cranston (D-Calif) and James Abourezk (D-S. Dak.), chairman of the Senate parks subcommittee.

The legislation, which cleared both houses by a wide margin, would expand the park to a total of 106,000 acres. Cost of acquiring the 48,000 new acres is estimated at $359 million. The bills were headed to a House-Senate conference at press time.

Unfortunately an NPCA-supported provision to give the Secretary of Interior authority to regulate logging in areas adjacent to the park's boundaries was omitted on the House floor. Instead both the House and Senate bills would give the Secretary standby authority to acquire lands in addition to those immediately added to the park. That is, if necessary to protect the park, the Interior Department could acquire lands within a 30,000-acre "Park Protection Zone" through declarations-in-taking. This approach is much less satisfactory than the regulatory one. For one thing, the government would then have to reimburse the timber companies for the land and the price would have to be worked out by the courts.

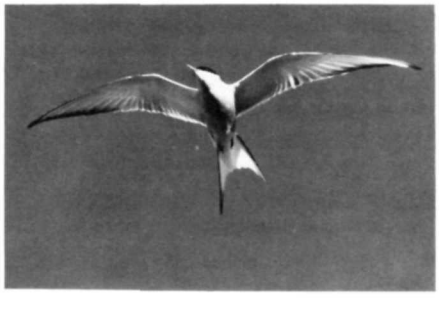
Furthermore, the Park Protection Zone does not cover the whole upper watershed of Redwood Creek, so the possibility remains that park resources

ALASKA D-2

Our Last Chance to Do It Right the First Time

With the embattled legislation to preserve prime public lands in Alaska now in its most critical period, NPCA members can play a crucial role in the nation's biggest land conservation battle ever by asking their congressmen and senators to support strong legislation.

Under Section 17 (d-2) of the Alaska Native Claims Settlement Act of 1971, Congress faces a legal deadline of December 1978 for deciding which federal lands to preserve as national interest lands. At press time, conservationists were hoping to get a relatively unscathed bill through the House by early spring and were figuring it might take a strong push to ensure Senate action before the deadline.



ARCTIC TERN, BY NPS

The choice facing the nation is really so simple as to be mind-boggling. Rep. John Seiberling (D-Ohio), chairman of the House Interior Subcommittee on General Oversight and Alaska Lands, emphasizes that "unlike the lower forty-eight states, where land use and ownership patterns are already set, Alaska represents an opportunity to protect immense tracts of unspoiled, pristine wilderness of great beauty and variety. There we can create a system of national parks, forests, wildlife refuges, and wild and scenic rivers whose boundaries are dictated, not by urban sprawl or the expense of repurchasing former federal land, but by ecological wholeness."

A massive media blitz by developers and some state interests in Alaska has grossly exaggerated the degree to which such action would place curbs on development in the state. Rep. Morris Udall (D-Arizona), who introduced the original version of HR 39 (the most generous bill) asserts that the Alaska subcommittee's work has represented "the most tireless, detailed, sophisticated study of a piece of legislation that I've seen in my career."

Nationwide hearings on the bill drew more than 2,300 people from forty states; a large majority testified in favor of HR 39. According to the Library of Congress, this issue has attracted more public participation than anything since the civil rights movement in the 1960s.

At press time the subcommittee had just approved a revised version of HR 39, having amended the bill in an attempt to devise a compromise. As originally introduced in the House, HR 39 would have added some 116 million acres to the four federal conservation systems and would have designated virtually all these additions as part of the National Wilderness Preservation System. It also would have

could still be adversely affected by future cutting practices on these lands.

Ads backed by timber interests had asserted that expansion of the park would result in closure of mills and loss of more than 2,000 jobs in the north coast area. Working with figures provided by the timber companies, however, a Senate committee found that the range of job losses would be between 260 and 921.

The Administration has pledged $40 million from existing programs to help diversify the local economy. One of the main differences between the two bills facing the conference committee at press time was that the House bill included a number of additional measures designed to mitigate any adverse effects on local communities and workers. Both bills call for substantial funding for a watershed rehabilitation program that will supply jobs in addition to those created by park expansion. (The bills involved different amounts for the program.) Another key difference between the bills concerned court jurisdiction. The House bill put settlement of land costs in the Court of Claims, as preferred by timber companies. The Senate bill gave jurisdiction to the federal District Courts, the approach favored by the Interior Department.

However, it seemed likely that the differences could be resolved expeditiously and that President Carter, who supported the legislation, undoubtedly would sign the bill into law at the first opportunity.

Even with the new law, conservationists will have to continue working to protect the park because the upper watershed of Redwood Creek remains inadequately protected. Nevertheless, the law will be a big step toward ensuring that the ancient redwood forests in the national park—including the tallest living things on earth—will endure for centuries to come. ■

designated about 30 million acres within existing parks, forests, and refuges in Alaska as wilderness—for a total of 146 million acres. After considering the Administration's recommendations, the national interest, the interests of the state of Alaska and of Alaskan native peoples, and detailed surveys of Alaska's resources, the subcommittee pared the additions to the four systems down to 97.5 million acres and cut the wilderness acreage almost in half—to about 82 million acres. Seiberling estimates that, with the subcommittee's revisions, 85 percent of the lands in Alaska would be open to mineral and other development.

Developers' claims of a "lockup" in Alaska because of d-2 legislation simply don't wash. Seiberling points out that under the Alaska Statehood Act and the Alaska Native Claims Settlement Act the state of Alaska will receive 104 million acres of federal lands and the natives will receive 44 million acres. The 104 million acres represent a California-sized birthday present going to a state with a population about the same size (400,000+) as the city of Fresno.

Conservationists were disappointed that the subcommittee changed parts of several proposed national parks to "national preserve" status, a designation that would allow possible mineral entry in nonwilderness areas and sport hunting.

In subcommittee action, Seiberling held just enough votes to prevent more serious modifications to the draft bill. For instance, Rep. Lloyd Meeds (D-Wash.) attempted to change boundaries, drastically reduce wilderness acreage, and open more areas to development by changing the designations from parks to preserves, preserves to refuges, refuges to forests, and deleting areas altogether—thus relegating them to BLM management. Rep. Don Young (R-Alaska) also offered many weakening amendments.

Continued on page 24

NATIONAL FOREST WILDERNESS

Cougar Lakes Controversy

The National Forest Service recently released a Land Use Planning Study of the Cougar Lakes area in Washington State that conservationists criticize as grossly inadequate.

The Cougar Lakes area is located in the Snoqualmie and Gifford Pinchot national forests just east of Mount Rainier National Park. It is a popular recreation spot for residents of the Seattle–Tacoma metropolitan area, just sixty miles to the east. The Forest Service proposes only 138,854 acres for wilderness designation, leaving more than 100,000 wilderness-worthy acres of this area open to the bulldozer and the chainsaw.

Conservationists claim the plan overemphasizes timber production at the expense of irreplaceable wilderness and ecological and recreational values. NPCA advocates the wilderness proposal outlined by the Cougar Lakes Wilderness Alliance, a local conservation organization. That proposal includes a northern unit of about 67,000 acres and a southern unit of about 190,000 acres.

Wilderness designation for these areas would provide for many uses of the region. Fishing, grazing, horseback riding, hunting, hiking, and camping would continue. High-quality watersheds important to farming in Yakima Valley would be protected. The action would preclude logging of no more than 0.5 percent of Washington's annual timber harvest.

At public hearings held in Washington during February, NPCA advocated an enlarged Cougar Lakes Wilderness proposal and urged special action on two other areas also deserving of wilderness designation. NPCA endorsed a 25,500-acre Clearwater Wilderness, which would include land adjacent to the northwest corner of Mt. Rainier National Park and now proposed for wholesale timber harvest by the Forest Service. NPCA also backed expansion of the Goat Rocks Wilderness, adjacent to the Cougar Lakes to include Pine Grass Ridge as well as the existing 11,000-acre Wilderness Study Area. ■

Alaska—*Continued from page 23*

At press time it was expected that such attacks undoubtedly would be renewed in full Interior Committee, where the bill was headed. At that time the bill still needed approval by both the Interior Committee and the Merchant Marine and Fisheries Committee before it could be considered by the full House. NPCA and other members of the Alaska Coalition, a group of organizations working for strong d-2 legislation, considered the bill passed by the Interior Subcommittee on General Oversight and Alaska Lands a generally solid but "bottom line" proposal.

Meanwhile, the Senate continued to lag behind the House on the legislation. The Energy and Natural Resources Committee had scheduled hearings, but it was too early to predict when markup would be and what bill would be chosen as markup vehicle.

Committee chairman Henry Jackson (D-Wash.) had introduced the 92-million-acre Andrus proposal (S 2465) at the Administration's request. Alaskan wilderness lost one of its most ardent spokesmen with the death of Sen. Lee Metcalf (D-Montana), who had introduced the Senate counterpart (S 1500) of the original HR 39, the proposal preferred by the Coalition. Conservationists have been hoping that Sen. Dale Bumpers (D-Ark.), who replaced Metcalf as chairman of the Energy Subcommittee on Public Lands and Resources, would also replace him as champion of S 1500.

Sen. Ted Stevens (R-Alaska) countered those proposals by introducing a bill popularly called the "rock and ice" proposal because it would protect mostly only that—for a total of 25 million acres in the four systems. This "fifth system" bill, S 1787, would place another 55 million acres under joint federal/state jurisdiction, which could open the land to exploitation.

Thus, NPCA members may wish to ask their senators to co-sponsor S 1500, the Metcalf bill, and urge their congressmen to hold the line in the House by supporting HR 39 *as approved by the subcommittee* and by working to restore some of the deletions to the bill. Here is more information on the key issues that will arise in both House and Senate debates:

• **Minerals.** The Bureau of Mines and U.S. Geological Survey (USGS) have focused special attention on the lands proposed for conservation; these lands have been subject to much more extensive surveys than other lands in Alaska. The House subcommittee already has made compromises to exclude the vast majority of Alaska's most promising mineralized lands from conservation areas. Along with state and native lands, 75 million acres of BLM lands and some national forest lands in Alaska are now open to mineral entry. In addition, the House subcommittee developed a special process to allow mining in nonwilderness areas of refuges and national preserves in cases of national need. (National parks and monuments are closed to mineral entry except for valid existing claims.) A total of 77 percent of Alaska would be open to mineral entry and development if the subcommittee's bill were enacted into law.

Even on geologically promising lands, high costs render Alaska a low-priority area for metal mining. Nevertheless, if the national need for a mineral could not be met from other U.S. sources, the Interior Secretary and Congress could approve mining within conservation areas under the special process. Development interests will try to weaken the minerals process so that only one house of Congress would have to approve a mining permit. Conservationists want the process strengthened to require mandatory public hearings.

• **Oil and Gas.** The USGS has mapped the areas of Alaska that have favorable potential for oil and gas. Most of Alaska's oil and gas is presumed to be located in offshore deposits not affected by the legislation. Furthermore, only 18 percent of Alaska's on-shore oil and gas potential is within the scope of HR 39. Virtually all this acreage is within the Arctic Wildlife Range.

NPCA believes that it would not be in the national interest to jeopardize our nation's largest caribou herd—which the proposed extended range

QUETICO-SUPERIOR

Atikokan Power Plant Underway North of BWCA

Hundreds of letters—including many from NPCA members—have been pouring into Washington, D.C., offices of the State Department and Canadian embassy to protest plans for the coal-fired Atikokan power plant in Ontario.

Unfortunately, preparations for the 800-megawatt plant, which will feature no scrubbers to control sulphur dioxide (SO^2) emissions, already are underway just upwind of Quetico Park, Ontario, and the Boundary Waters Canoe Area, Minnesota. Scientists predict that its emissions would cause sulphur dioxide pollution and "acid rain" in both areas.

After Minnesota congressmen, NPCA, and others criticized an EPA study of the project, in February EPA and the State Department called a conference of scientists to examine the study. Although the study confirmed that the plant would exceed the amount of SO^2 pollution allowed in national wildernesses under U.S. law, the consensus of the invited scientists was that it failed to examine probable effects of that pollution on the BWCA. Recent research shows that a number of the softwater lakes in the BWCA region already have reached the point at which even a small increase in acidity could lead to biotic impoverishment. Furthermore, scientists noted that some lakes already have high mercury levels and acid rain could intensify accumulation of the mercury by fish. The latest research shows that growth of vegetation in the BWCA could be affected. The study did not even consider transboundary water pollution. At the Chicago meeting NPCA called for full funding for a much more comprehensive study.

Meanwhile, at press time international negotiators were focusing on a proposal to simply "monitor" effects of the plant rather than seriously considering installation of scrubbers or—better yet—another site. Several scientists have expressed concern that a monitoring program would be unable to detect damage until it was irreversible. NPCA has repeatedly called upon the two governments to refer this issue to the International Joint Commission with a moratorium on construction. ■

would protect—for that oil and gas. In fact, Secretary of Interior Andrus has stated that this area should be the *last place in the country to be drilled for oil!* The state, however, wants part of the range for possible development.

• **National Parks/Preserves.** The HR 39 proposals have been threatened by a change in the status of many of the proposed park areas to "preserves." These areas were originally part of national park proposals offered by the Alaska Coalition. In fact, NPCA has advocated conversion of the preserves in the original HR 39 to parks and monuments. The "national preserve" status would subject the areas to the minerals process unless they are designated as wilderness, and it also would allow sport hunting under *state* regulation. The northwest extension of Mount McKinley National Park and significant parts of proposed areas such as Wrangells—St. Elias, Kobuk Valley, and Lake Clark have been changed to national preserve status. NPCA members can urge restoration of these areas to national park designation with full wilderness protection.

• **Wilderness.** Because state and development interests are lobbying to keep areas within national forests, refuges, and preserves out of wilderness designation, one of the toughest fights of all will be to keep HR 39 and S 1500 wilderness proposals intact. NPCA members can emphasize to their senators and congressmen that wilderness boundaries have been drawn to exclude the most promising mineral and other exploitable resources and at the same time to protect complete ecosystems. It also should be noted that the subcommittee-passed bill recognized the special problems inherent in designating Alaskan wilderness by permitting customary uses of aircraft, motorboats and snowmobiles, limited commercial services, and public cabins. In national forest wildernesses, fish stocking and development of small aquaculture sites would be allowed and —as in the lower forty-eight—taking of fish and game would be permitted. The suitability of the areas proposed for wilderness designation has been confirmed by extensive reviews, so there is no justification for developers' efforts to have wilderness designation deferred until later.

• **Timber and Southeast Alaska.** Except for southeast Alaska, timber resources in the state are scanty. The proposed wilderness designations within the national forests in the southeast will be attacked even though Forest Service data have shown that protection of the areas in question will not adversely affect the current level of timber industry in Alaska and the Administration supports most wilderness in the subcommittee print. NPCA members can help preserve Alaska's remarkable northern rainforest/island ecosystem by supporting HR 39 wilderness proposals for Tongass and Chugach forests.

• **Access and Transportation Corridors.** Landowners and state and native interests are guaranteed access to their lands,

Continued on page 27

Be An NPCA CONTACT

Looking for a way to be a more active member of the conservation movement? Want to translate your interest in the national parks and the environment into concrete action? Why not join NPCA's CONTACT program?

Members continually ask how they can become more active in NPCA's programs involving National Park System lands, forests, wildlife, and other environmental concerns. In response to this interest, NPCA organized a CONTACT program two years ago. Since then the number of members involved has steadily increased and the program's scope has broadened.

All CONTACT participants must be members of NPCA. As a CONTACT, you will receive ALERTS from NPCA staff on important park and environmental issues. These ALERTS include suggestions for specific actions—such as letter-writing or testifying at hearings—that members can take to assist NPCA's efforts.

Although our CONTACT program is going strong, to be fully effective it needs more participants. If you want to be more involved in NPCA programs, just fill out the form below and mail to Programs, NPCA, 1701 18th St., N.W. Washington, D.C. 20009. We look forward to working with you.

NAME: _____

ADDRESS: _____

_____ PHONE: _____

☐ I am a member of NPCA and want to become a CONTACT.
☐ I would like more information on the CONTACT program before I join.
☐ As a CONTACT, I would be particularly interested in these National Park System units:

_____

PROPOSED YUKON-CHARLEY NATIONAL RIVERS; BY ROBERT BELOUS, NPS

NPCA CONTACTS *will be needed in the weeks ahead to help protect national interest lands in Alaska.*

CAPE HATTERAS

NPS Heads for Off-Road Vehicle Showdown in Low Gear

Even though use of Cape Hatteras by hundreds of off-road vehicles each year is endangering the national seashore's environment, local interests apparently will fight even the most modest plans to place restrictions on the vehicles.

Segments of Cape Hatteras will be closed to such vehicles if a proposed ORV management plan for the North Carolina NPS unit is approved. The management plan would restrict ORVs from 50 percent of the Cape Hatteras shoreline. However, NPCA has objected to the fact that it would place no limitation on the number of ORVs on the shore at any one time even though NPS concedes that there are "one hundred thousand ORV uses per year . . . with no upper limit in sight!"

Nevertheless, the Park Service deserves praise for offering the proposal at a time when even less stringent restrictions on ORV use at Assateague and Fire Island national seashores are under fire. At the same time, NPCA is urging that the plan be strengthened in several key areas.

NPS calls the plan a compromise between providing for "practical public access" and recreation and "holding down damage and conflict among users to an acceptable minimum."

From NPCA's perspective, the plan is more of a concession to political pressure from local ORV users than a compromise between this select user group and the protection of the interests of other visitors and the wildlife and other resources of our public land. The justification for providing "practical public access" by ORVs is questionable when one considers that the maximum distance from any through-road or parking lot to the beach of Cape Hatteras is two to three miles—often much less.

The ORV use plan proposes to leave twenty-five miles of beach open to ORV use year-round, eleven miles open from October through April, and thirty-seven-and-one-half miles closed to ORVs throughout the year, except by special permit. In the open areas, ORVs will be restricted to a defined access and a 100-foot driving corridor along the tide.

The proposed closed areas include areas of heavy pedestrian use, popular swimming beaches, areas adjacent to campgrounds, existing and proposed parking, and wildlife habitat.

The plan fails to adopt any strategies for controlling the number of ORVs on the shore at one time, even though it states that "there is obviously a limit to the amount of traffic land can bear and still support vegetation and wildlife."

NPCA has recommended several specific changes that would strengthen the ORV management proposal for Cape Hatteras. Some areas need to be closed to ORV use either seasonally or year-round in order to protect tern and skimmer nesting areas. In other places ORV use conflicts with swimming and other visitor activities.

Most importantly, NPCA urged initiation of a system to control the number of ORVs using an open area at any one time. Carrying capacities should be determined for areas open to ORVs, and the number of ORVs should be limited accordingly by controlling daily access to the ramps or by using a permit system. Otherwise, congestion and conflicts could worsen as more and more ORV users crowd into fewer areas.

You Can Help: The Park Service will be under pressure from ORV users to weaken the restrictions proposed for ORV use. Write the Superintendent of Cape Hatteras National Seashore to express your support for the new management plan and to urge adoption of NPCA's recommendations.

Superintendent Bill Harris
Cape Hatteras National Seashore
Route 1, Box 675
Manteo, NC 27954 ■

GRAND TETON

Jetport Plans Threaten Wild Jackson Hole Valley

In Grand Teton National Park the "call of the wild" apparently soon could receive a lot of competition from the roar of commercial jet aircraft.

The Federal Aviation Administration currently is leaning toward approving a proposed extension of the runway and taxiway of Jackson Hole airport within the park, while the Department of the Interior is deciding whether to grant a special use permit for the project.

NPCA has urged the government to deny the proposed expansion and airport improvements because they are incompatible with the nature and purpose of the national park. In fact, this Association has long questioned the appropriateness of situating an airport within a national park in the first place, and advocates the eventual removal of the airport from the scenic Wyoming parkland.

One of two airports in the Park System, the Jackson Hole facility became part of Grand Teton National Park when the park boundaries were expanded in 1950. (An air training strip inherited by NPS with establishment of the Big Cypress National Preserve is likewise a problem.) The Jackson Hole airport operates under a special use permit that won't be up for review until 1995. The long-standing controversy over opening the airport to commercial jets came to a head recently when the FAA released a draft environmental impact statement on the project.

Support for the jetport comes from local business and tourist organizations in the town of Jackson Hole. These organizations presently account for most of the airport's customers; a scant 1.1 percent of the visitors to Grand Teton National Park arrive in Jackson Hole by commercial aircraft.

Jackson Hole airport is located at the foot of the Teton Mountains in historic and scenic Jackson Hole Valley. Moose, elk, several species of small mammals, and many species of birds use this rich river valley as feeding and mating grounds. In fact, the

Continued on page 28

Alaska—*Continued from page 25*
although they may not be able to use the most direct routes in every case. The bill also benefits development interests by setting up a special process for making decisions about allowing transportation corridors and transmission lines across areas in the four conservation systems. Such a procedure has already proved extremely successful—by both economic and ecological criteria—in the case of selecting a natural gas pipeline route in Alaska. Development interests, however, will try to alter the legislation to establish specific transportation corridors rather than allow for this orderly process. For instance, they want to carve a corridor through the upper Noatak to connect the North Slope to Gulf of Alaska ports.

• **Boundary Determinations and the Fifth System.** State and development interests will continue to try to cripple legislation by attempting to establish some type of "fifth system" of land management in Alaska as Sen. Stevens advocates. They will try to reduce the acreages protected in many of the units. Proposals for new parks and wildlife refuges are intended to protect representative samples of Arctic and Subarctic environments in their natural condition. Animals in Alaska need considerable range, and there is space enough to preserve it for them. Alaska's wild lands nurture healthy populations of wildlife that are rare or endangered elsewhere—grizzly and brown bear, caribou, wolves; her vast wetlands support nesting waterfowl from the four major flyways; and her fisheries are some of the most productive in the country. NPCA members can help by emphasizing that nowhere else in the United States will we ever again have the chance to preserve whole ecosystems and that permitting either a fifth-system approach or state inholdings within conservation units would ignore ecosystem considerations and be completely unacceptable.

You Can Help: NPCA members can help by immediately calling or sending letters, telegrams, or mailgrams to their congressmen and senators. You can reach your congressman at the U.S. House of Representatives, Washington, D.C. 20515 and your senators at the U.S. Senate, Washington, D.C. 20510. In addition, let Rep. Morris Udall, Interior Committee chairman, and Sen. Henry Jackson, Energy and Natural Resources Committee chairman, know of your concern about the future of Alaskan lands. ■

PROPOSED BERING LAND BRIDGE NATIONAL PRESERVE; BY T. STELL NEWMAN, NPS

In the time-honored manner of their prehistoric ancestors, Eskimos in the village of Shishmaref, located on a small barrier island in the Bering Sea, still cure sealskins in the Arctic sun. Under proposed legislation supported by conservationists, the subsistence culture of the Eskimos would be protected. One of the new additions to the National Park System would be a 2.48-million-acre Bering Land Bridge National Preserve designed to protect cultural and historical values as well as duck and goose habitat. Alaska Sen. Ted Stevens and Rep. Don Young, however, are proposing to preserve a much smaller acreage and to place it in the National Wildlife Refuge System. They are completely overlooking the fact that in no other place in this nation can we commemorate and study that great prehistoric event, the migration of early man from Asia to the Americas. *(See page 4.)*

SOLAR ENERGY

When Wednesday is Sun Day

A broad coalition of unionists, small entrepreneurs, social activists, environmentalists, and consumers will join forces on Wednesday, May 3, to celebrate Sun Day. In the words of one of the organizers, they hope to "lead the United States into the solar era." May 3 is statistically the sunniest day of the year in the United States.

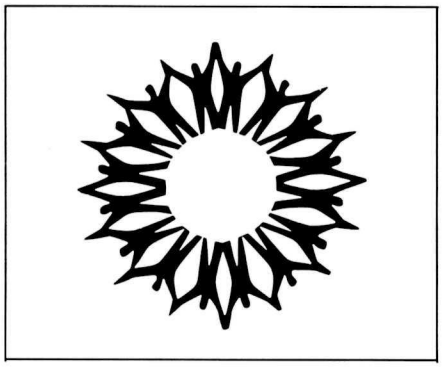
Sun Day, the solar equivalent of the spectacularly successful 1970 Earth Day, is being organized to educate the general public about solar energy; to celebrate this clean, nonpolluting, renewable energy source; to inform government and business leaders of widespread support for solar conversion; and to alert those same leaders to the need for developing a mass market in solar energy.

Sun Day organizers believe that solar energy is perhaps the one issue that a broad group of people can all agree on. Labor unions see the development of a solar energy industry in terms of millions of new jobs; environmentalists support solar energy because its widespread use would greatly reduce pollution; consumers and farmers view solar energy as a way to reduce energy costs; and social activists hope to eliminate reliance on centralized power sources and increase U.S. energy independence.

Department of Energy Secretary James Schlesinger has signed a memo supporting and encouraging DOE's cooperation with the events planned for Sun Day.

Sun Day events are planned in all fifty states of the nation. For instance, one group is planning a celebration on Cadillac Mountain in Acadia National Park, Maine—the point in the United States that receives the first rays of the morning sun. Sun Day events in Washington, D.C., will include a solar fair on the Mall. Other groups in cities and smaller communities throughout the United States are planning a diversity of Sun Day activities. For more information about activities in your area, write Sun Day, Suite 1100, 1028 Connecticut Ave., N.W., Washington, D.C. 20036.

While Sun Day activists have been making their plans, a coalition of senators, representatives, and environmental and consumer lobbyists has been readying a series of solar energy bills. One piece of legislation—the Solar Energy Policy and Conversion Act of 1978—would begin a mass conversion to solar energy. The goal of the congressional coalition is to convert the United States to a 25 to 50 percent solar economy by the year 2000 without damage to the economy. The bill would require analyses of this goal and environmental impacts of solar conversion and would require the use of solar energy in all government projects whenever possible. Other pieces of legislation include widening the scope of a proposed solar loan program; providing money for a solar agriculture program; and providing DOE with money to establish alternative energy structures in developing nations.



Sun Day leaders recently criticized the Carter Administration for failing to fulfill campaign promises to boost solar energy. They pointed out that the fiscal year 1979 Administration budget proposal includes $11 million less for solar energy than the fiscal year 1978 budget did. The budget request of $400.5 million for solar energy "is not even the financial equivalent of one small weapons system," remarks Denis Hayes, chairman of the board of Solar Action, the organizing body promoting Sun Day. ■

Jetport—*Continued from page 26*

largest concentration of sage grouse in the park can be found strutting and nesting at the end of the existing runway. Visitors travel through the valley on raft trips down the Snake River and in vehicles coming into the park through the town of Jackson.

NPCA is concerned about the fact that the proposed expansion will increase noise levels in this and other areas of the park, including the Menor's Ferry Historic District. Moreover, the spectacular view of the Teton Mountains would be impaired by the changes accompanying the airstrip construction. The impact of expansion on wildlife inhabiting the area would be immeasurable. Areas currently proposed for wilderness designation could be affected by the action.

NPCA pointed out to the Secretary of Transportation that Section 4(f) of the Department of Transportation Act requires that the secretary deny approval to any program or project that requires use of national park land unless it can be proven that there is "no feasible or prudent alternative to the use of such land." NPCA contended that the construction of the proposed jetport on lands outside the park is both feasible and prudent and that the FAA's objection to other sites is only one of convenience.

This Association does not believe that either the cost or convenience of the jetport justifies the degradation of wilderness values of Grand Teton National Park.

You Can Help: The secretaries of Interior and Transportation need to hear from members who agree with this position that the proposal to expand the Jackson Hole airport should be denied:

Honorable Cecil D. Andrus
Secretary of the Interior
Washington, D.C. 20240

Honorable Brock Adams
Secretary of Transportation
Washington, D.C. 20590 ■

conservation docket

Mineral King

Assistant Secretary of Agriculture Rupert Cutler announced at a House parks subcommittee hearing on January 26 that the Carter Administration will support HR 1771, a bill to add Mineral King Valley in California to Sequoia National Park. The announcement represents a radical departure from the Forest Service's long-standing support for developing a huge mechanized ski resort in the alpine wilderness valley. (See January issue, page 20.) Recently the Agriculture Department (the Forest Service's parent department) had considered a scaled-down development as a compromise, but that proposal was dismissed as economically unfeasible. Now that department, along with the Interior Department, is recommending passage of HR 1771, the bill introduced by Rep. John Krebs (D-Calif.). Subcommittee action on the bill is expected soon. The proposal could be considered separately or added to an omnibus parks package under consideration. ■

Jean Lafitte Historical Park

In early February the Senate Subcommittee on Parks and Recreation held hearings on the proposed Jean Lafitte National Historical Park in Louisiana. The park would preserve areas in and near the city of New Orleans, including parts of the historic French Quarter and a portion of Louisiana's characteristic bayou country—the vast Barataria Marsh. Long associated with the notorious buccaneer and hero of the Battle of New Orleans, Jean Lafitte, the marsh is a land of swamps and bayous overgrown with cypress, palmetto, and Spanish moss that provides habitat for alligator, white-tailed deer, and many species of birds. Sen. J. Bennett Johnston (D-La.) has introduced S 1829, a bill to establish the historical park.

Testifying in favor of the bill, National Park Service Director William J. Whalen noted the area's many historic and cultural resources worthy of preservation and interpretation.

The Park Service recommended several amendments to the legislation, the most important of which would establish a protection zone around the 8,000-acre Barataria Marsh unit. Louisiana state and local governments would ensure that incompatible development is kept out of this zone by means of their land-use controls. When the Secretary of the Interior is satisfied that the marsh is adequately protected, he can convey the area to the state or local government and let it assume responsibility for the operation and maintenance of the Barataria Marsh unit.

The Park Service also requested authority to assist financially those property owners entering into cooperative agreements with the Secretary of the Interior for the preservation and interpretation of their properties. Such assistance would be used to ensure the high standards of operation and maintenance required by the agreements. ■

Endangered Species Act

Hearings to consider the reauthorization of appropriations for the Endangered Species Act have been scheduled by the Senate Resource Protection Subcommittee for April 13 and 14.

Because of recent conflicts involving endangered species and federal construction projects, attempts to tack amendments onto the reauthorization legislation in order to weaken the Act are expected.

The controversy is focused on Section 7, the part of the Act that gives it the teeth it needs to protect critical habitat. This section specifies that federal agencies must cooperate with the Secretary of Interior to ensure that no harm will come to endangered species as a result of federal actions such as construction of federal water projects.

Citing such highly publicized conflicts as the snail darter/Tellico Dam controversy, critics of the Act argue that it is inflexible and in need of revision. Proposed amendments would grant federal agencies such as the TVA and the Corps of Engineers the right to continue with projects regardless of any threat to endangered species.

Environmentalists and Administration officials have been quick to

counter these claims of inflexibility. Council on Environmental Quality Director Charles Warren and Interior Department officials pointed out at 1977 hearings before the subcommittee that in the four years since the Act's passage, only three confrontations out of a potential 4,500 have resulted in litigation. In the vast majority of the cases, no modifications or only minor ones were necessary. The present administrative process is working well. (See January 1978 issue, pp. 29–30, and June 1977, pp. 16–20.)

Opponents of the amendments stress that the Endangered Species Act is the only hope for the survival of many species. To weaken any section of it would doom many species to extinction and ultimately affect the integrity of the environment itself. ■

Continued from page 2
environment which surrounded men and the other animals together. The natural balance was a hard one, measured by the extremes of weather and terrain; but it was maintained, and it supported a colorful array of good human cultures for thousands of years.

Now the machines, the roads, the pipelines, and the high-powered rifle have come, and jobs with high pay for a time, and the native civilizations are battling for survival; one question is whether subsistence hunting can continue. Most conservationists, and NPCA among them, support genuine subsistence hunting in the proposed national parks of Alaska where it has been an established practice and is carried on by traditional methods for traditional purposes, not as a disguise for sport or commercial hunting. We recommend this position to our members for the purposes of communication with their congressmen and senators.

THE GOVERNOR, one senator, and the single congressman from Alaska have taken a different approach to the entire national interest lands issue from that of the Administration and Chairman Udall. A total of only 25 million acres would be included by their proposal in the park, refuge, forest, and wild river systems—mostly only rock and ice. Even more disturbing, the bulk of the remaining Alaskan public lands would be put in a new fifth system to be classified and overseen by a federal-state commission. Such an unprecedented divestiture of federal control over public lands would be an outrageous affront to the people of this country and cannot be accepted. We urge our members to oppose this fifth system in their letters to Congress.

The term *national interest lands* comes from the Alaska Native Claims Act, which established the protective procedures now being completed. They are also known as the d-2 lands from the section of the act which dealt with them. But they are national interest lands in a more important sense. They have always belonged to all the American people, including the natives; the special interests of the natives were provided for by the same act, which settled claims dating back to the arrival of the white man in Alaska. The present legislation takes nothing from state or private ownership, but merely retains preexisting federal public ownership of the lands in the interest of all citizens, including private landowners, whether Alaskans or Americans at large.

A FEW WORDS are in order about supposedly conflicting purposes. We in the NPCA are nonhunters as far as the great national parks are concerned. We recognize the strategic need for cooperation between hunters and nonhunters with a view to the protection of critical wildlife habitat, not only in Alaska, to be sure, but worldwide. But the vast reaches of wild Alaska are so bounteous for the hunters that there can be no need to intrude sport hunting in the proposed new national park units. The hunters are overplaying their hands. They can only harm themselves and their organizations, for public sentiment is already trending against them.

A SPECULATIVE FEVER is running high in Alaska. Land booms are in full cry around the cities; the plan to transfer the state capital from Juneau to a new site between Fairbanks and Anchorage has not helped. The growth-maniacs should have second thoughts. Booms are usually followed by busts. Human welfare is better measured by stable communities than by sprawling subdivisions.

The labor unions could help—the broad-visioned unions of the advanced industrial type—by getting into the picture with organizing campaigns which might crack the present dominantly exploitative outlook on the part of labor. We commend the United Automobile Workers on the endorsement of the Udall bill and on their strong stand for the protection of the national interest lands.

THE BIG CORPORATIONS, including the oil, mining, and sporting arms companies, should appraise their ethics and their commitment to the national interest in Alaska, for they, too, will one of these days be judged by the measure of their concern for the people and the environment within which they carry on their work.

If a little of the oil and some small reserves of minerals are included within the park system and protected against immediate exploitation, perhaps these resources can best be looked on as savings, if ever needed, for the future—in the interest, say, of national security and industrial productivity tomorrow.

—Anthony Wayne Smith

Since time began man has worshipped the sun. He has been awed by its tremendous, life-giving potential. Today, more than ever, that potential is awesome. For as we run out of nonrenewable resources, it becomes increasingly apparent that our survival will depend upon how effectively we can harness the sun's power. At NPCA we are very much concerned about solar energy, and we are doing everything we can to encourage its development and use. And you can help by supporting NPCA.

Since time began man has worshipped the sun. He has been awed by its tremendous, life-giving potential. Today, more than ever, that potential is awesome. For as we run out of nonrenewable resources, it becomes increasingly apparent that our survival will depend upon how effectively we can harness the sun's power. At NPCA we are very much concerned about solar energy, and we are doing everything we can to encourage its development and use. And you can help by supporting NPCA.

National Parks & Conservation Magazine

The Environmental Journal

April 1978