National Parks & Conservation Magazine

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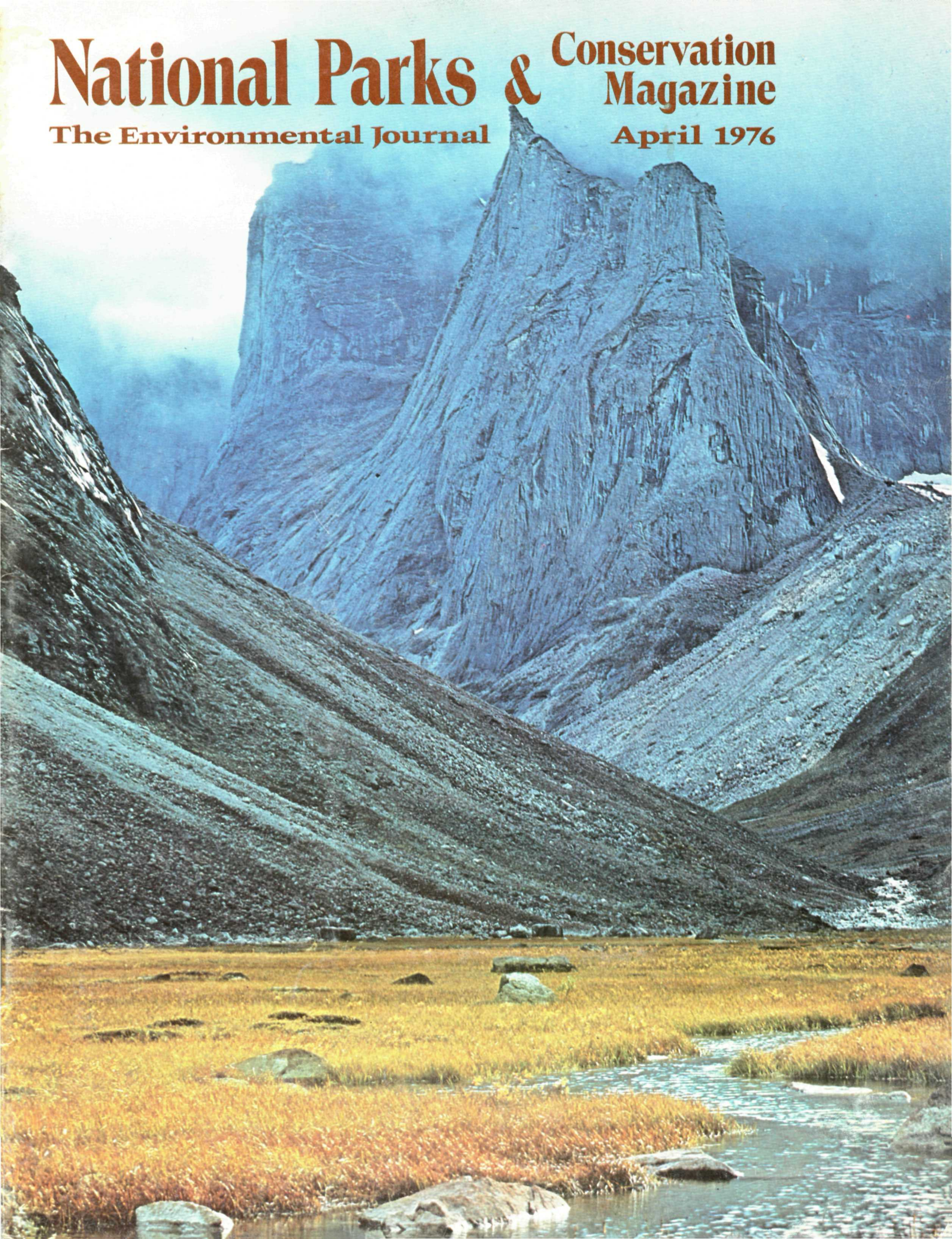

Prospects for a Law of the Sea

WHETHER A CONVENTION to lay the foundations for a Law of the Sea will emerge from the sessions of the United Nations Conference which opened in New York in the middle of March depends mainly on whether the industrial and agricultural countries can reach an agreement on the exploitation of the manganese nodules which lie on the deep seabed.

If this problem can be solved, most of the other items on the conference agenda will fall into place; if not, the entire effort may fail.

Five years and more of earnest work by top diplomats of many nations have thus far brought forth several agreed negotiating texts, possible components of the ultimate convention.

If only because one of the main objectives of the conference has been protection for the entire marine environment, the outcome is of major concern to environmentalists.

The dark mineral nodules about the size of potatoes, which form slowly in the profound depths of the ocean, contain manganese, nickel, copper, and cobalt. Some of these metals may soon be scarce in the industrial countries. The exports of the nonindustrial raw-materials countries which supply them could be adversely affected by deep-sea mining.

THE TECHNOLOGY of ocean mining is confined at present to half a dozen big industrial countries. They are insisting, with remarkable unanimity, on great freedom for their private or state enterprises in exploration and exploitation.

The nonindustrial countries have organized in a faction called the Group of 77. It probably contains at least a hundred nations. The group would have deep-sea mining done by an international agency known as the Enterprise, with authority over prices, production, and the pace and timing of exploitation.

In oversimplified terms, the United States, if our corporations had their way, would move ahead rapidly toward exploitation, and possibly preemption, with management mainly in the hands of the corporations. The other industrial countries, including the Soviet Union, with variations, would do likewise. They could then deal to advantage with the nonindustrial countries which produce these materials from sources on land. If the Enterprise were in control, the nonindustrial nations interested in deep-sea mining could defer action until their technology had been developed, and meanwhile protect the raw-materials countries.

THE INFLUENCE of the American mining and other corporations which have already invested and propose to invest further in deep seabed mining has weighed heavily in the formulation of American policy. The position of the Group of 77 has also appeared to be largely unshakable. The confrontation bodes no good for the development of a regime of international law and order for the world.

The position of the Department of State, presumably speaking for the United States as formulated last summer by Secretary Kissinger, has favored a compromise based on exploitation by both methods—by corporations or national agencies—and also by the Enterprise.

An International Seabed Resources Authority will presumably be created by the treaty, with a large Assembly, a smaller Council, a Secretariat, and in one relationship or another the Enterprise. The voting arrangements in the Assembly and the Council will determine the flow of power through the Authority and are obviously critical for any sort of compromise.

IT IS EARNESTLY to be hoped that the deadlock over deep seabed mining can be broken promptly. Americans need to remember that the interests of the American corporations are not necessarily the interests of America. What was good for General Motors was not necessarily good for America. This is the Public Cognizance of which John Kenneth Galbraith has written. What would be good for America, and hence for its corporations, and for all countries, would be a comprehensive treaty at once prudent and generous, establishing order in the world in the exploitation of the mineral resources of the oceans.

The national interest of the United States does not lie in sending its transnational corporations out to sea with guarantees of their investments and profits and assurances of naval protection if they get into trouble. The Department of Defense has been realistic and quite unenthusiastic about going to war for the nodules.

ANOTHER MAJOR ISSUE has been vessel-source pollution; that is, pollution of the seas from collisions and discharges from ships. The authority to regulate such matters will presumably be left where

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weathered american chestnut trunk
jack jeffers photograph

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COVERS Gates of the Arctic, by Robert Belous
A stark, dramatic land of many contrasts, the proposed Gates of the Arctic National Park contains the incredible Arrigetch Peaks (front cover) and the lovely Takahula Lake (back cover), one of many lakes in this northland that offer landing space for a small seaplane—dwarfed here by the magnificent wild surroundings. When Gates of the Arctic National Park is finally established, it will be our northernmost park. (See page 4.)

National Parks & Conservation Association, established in 1919 by Stephen Mather, the first Director of the National Park Service, is an independent, private, nonprofit, public service organization, educational and scientific in character. Its responsibilities relate primarily to protecting the national parks and monuments of America, in which it endeavors to cooperate with the National Park Service while functioning as a constructive critic, and to protecting and restoring the whole environment. Life memberships are $600. Annual membership dues, which include a $6.50 subscription to National Parks & Conservation Magazine, are $120 Sustaining, $60 Supporting, $25 Contributing, $18 Cooperating, and $12 Associate. Student memberships are $8. Single copies are $1.50. Contributions and bequests are needed to carry on our work. Dues in excess of $6.50 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.

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Northernmost National Park

GATES OF THE ARCTIC

Millions of acres of wilderness in the spectacular Brooks Range in Alaska have been proposed for preservation as a national park

article & photos by M. WOODBRIDGE WILLIAMS

WE CAME IN with a roar and a prayer: a prayer for good weather and the Cesna's sturdy engine. It marked the beginning of a great adventure at the Gates of the Arctic and the central Brooks Range in Alaska. Our flight followed the broad, gentle valley of the Noatak River, a pristine 450-mile flow that bisects the western half of the Brooks Range above the Arctic Circle. As we approached the Noatak headwaters where the Baird Mountains on the south and the De Long Mountains on the north close in the Schwatka Mountains, we saw a jagged tapestry of rock and snow rising from a sea of peaks.

From the swirl of knife-thin ridges emerged two turrets, each standing 200 feet above the ridges; and we concluded that this must be Mount Igikpak, which in Eskimo means simply "two big peaks." For me, as a National Park Service photographer, it meant the culmination of a long trail of parks across the continent and the beginning of a fitting tribute to the national park idea—the proposed establishment of a Gates of the Arctic National Park at the continent's northern rim.

Here the majestic arc of the 600-mile-long Brooks Range—the northern extension of the Rocky Mountain System—cuts off the arctic coast from east to west and from the rest of interior Alaska. Now the three of us—pilot Charlie Allen of Anchorage, cameraman Philip Vaughan of Bettendorf, Iowa, and I—were entering the largest wilderness remaining within the United States. The trip came of a 45-year-old idea.

FROM 1929 TO 1939 a forester named Robert Marshall—who helped found The Wilderness Society in 1935—conducted a scientific investigation of tree growth at the area around the headwaters of the Koyukuk River above the Arctic Circle in the central Brooks Range in Alaska. From his headquarters in the mining camp of Wiseman, Marshall tracked up the North Fork of the Koyukuk where he came upon two opposing mountains that stood a short distance below the source of the Koyukuk in a grand canyon. He named the mountain on the west "Frigid Crags" and the mountain on the east "Boreal." Struck by the splendor of the scene, he called the two peaks collectively "The Gates of the Arctic" and suggested that the entire Brooks Range, from the Yukon to the Arctic Sea, be set aside as a wilderness area.

Marshall's recommendation may reach fruition as a result of several proposals before Congress. One bill, HR 6089, the Department of the Interior proposal, calls for an 8.36-million-acre national park. Another proposal, HR 2063, sponsored by Congressman Morris K. Udall, calls for the establishment of a 12.2-million-acre park. The third bill, HR 6848, sponsored by Congressman Don Young, would establish a 3.24-million-acre park.

The Alaska Native Claims Settlement Act of 1971 provided for the final settlement of native claims as well as the study and possible establishment of new preserves as either parks, wildlife refuges, wild rivers, or national forests. I have been fortunate to participate in the study of this pristine arctic wilderness for the past four years.

In working our way north we had flown over and photographed the proposed Noatak National Ecological Range to the west and the proposed Kobuk Valley National Monument to the south and west. Earlier we had photographed the great Coast and Alaska ranges, but no single feature stood out so dramatically as Mount Igikpak, the 8,510-foot double-turreted peak that crowns the Brooks Range.

We circled Igikpak on one of those rare and glorious days that melts away the awesome and stark nature of the arctic scene. Shafts of sunlight, like spotlights on a great painting, played across the mountain. Beneath us receding glaciers fed the Noatak to the west and the Reed River running to the Kobuk in the south, and the runoff created abstract patterns across the land.

We turned east toward a jumbled mass of granite peaks sculptured to incredible hatchetlike ridges. The inland caribou hunters, the Nunamiut, call this vertical land Arrigetch—"fingers of the hand extended."

As the sun set behind the ridges, we slid from the grasp of the Arrigetch down canyons to Takahula Lake and the Alatna Valley. Here the jagged rock and skree slopes give way in finished sculpture. Here the spruce forest mellows the

raw glacial scene. The lake sits on a bench several hundred feet above the Alatna River's course, which was overdeepened by a valley glacier that cut through some of the oldest limestones and schists of the range.

At dusk we left Alatna Valley for Bettles Field, where the Federal Aviation Administration controls traffic for the Brooks Range and which would be our base for the summer. The field is built near the small Indian village of Evansville. At the Lodge, the only two-story structure in town, we waited for further breaks in the weather or explored nearby villages.

One cloudy Sunday Charlie and I journeyed four miles downstream to some property that Charlie owned in Old Bettles, a mining camp at the head of navigation that had sparkled around the turn of the century and lasted through World War II. I will never forget watching a fox on a sandbar there stalking a young sandhill crane that seemed mesmerized by the threat.

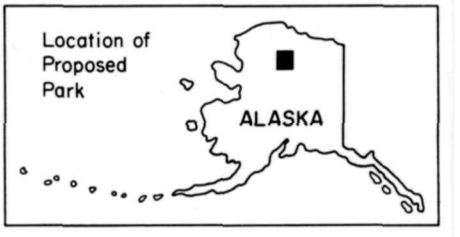
The Bettles area has a continental subarctic climate where temperatures may reach the 90s in summer and −70s in the long winter. White and black spruce cover the land and grow up the canyons to about 2,100 feet. Then thickets of shrubs take over: resin birch, alder, and willow. These shrubs are followed by the ubiquitous tussock tundra and alpine tundra, which cover about 90 percent of the land within the proposed park. The tussocks consist of cottongrass—a sedge, *Eriophorum*—that builds up mounds that make walking difficult. The alpine tundra covers ridges and exposed slopes up to the snowline. The combination of forbs, grasses, low shrubs, and lichens often makes springy mats that are easy to walk on. Below, the tough stuff spreads for miles over the permafrost all the way to the Arctic Ocean, often underlaid by ice wedges and polygons. This arctic climate yields only seven inches of precipitation a year, most of which falls in the three warm months of the summer.

Rugged 8,510-foot Mount Igikpak is the highest peak in Gates of the Arctic park.

ROBERT BELOUS, NATIONAL PARK SERVICE

ROBERT BELOUS, NATIONAL PARK SERVICE

The fantastically tortured and precipitous jumble of peaks the Nunamiut call Arrigetch—"Fingers of the Hand Extended"—was obviously carved by ancient glaciers. The area is vaguely reminiscent of an arctic Yosemite.



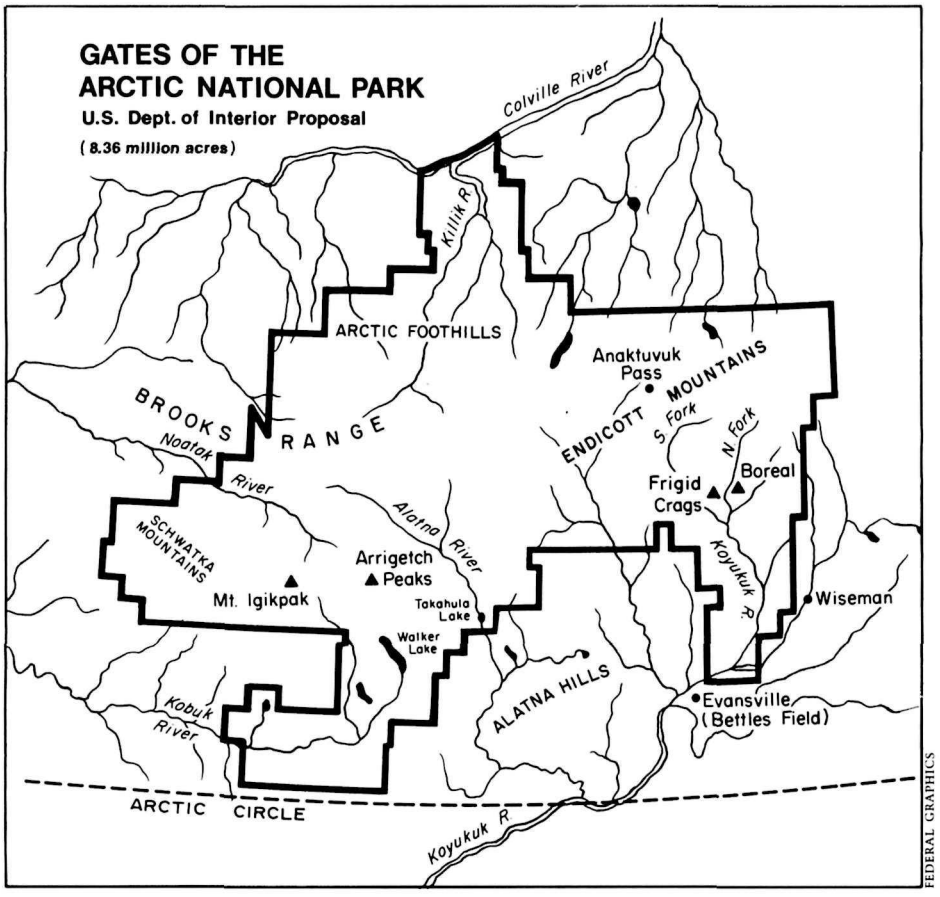
Whenever the weather provided, we tried to systematically photograph the various units of the Gates of the Arctic proposal. Along the south front of the Brooks Range several lakes nestle in glaciated valleys dammed by old moraines. The largest is Walker Lake, a 13-mile-long registered national natural landmark. Here we found excellent grayling fishing at the outlet and splendid botanizing along the banks. Even at the water's edge purple leaves of a wild chive nodded over the crystal clear ripples. Above, a splendid arm of the boreal spruce forest covered the lower slopes.

Until 1972 I had never thought of the north as a world of thunderstorms, so I was surprised to see headlines in the Anchorage paper about large areas of Alaska afire in July. Now in 1973 we flew over the aftermath of that exceptionally dry summer and observed the role that fire plays in the natural history of the spruce forests in Alaska. We passed above blackened areas where pink fireweed grew; then older burns where willow, alders, and labrador tea had germinated. Next came green stands of paper birch and balsam poplar, and quaking aspen on the warmer south slopes. Finally the slow-growing spruce emerged—white spruce growing in the dryer sheltered canyons and southern exposures, black spruce in boggy areas and open forest with lichens and mosses.

Occasionally we saw animals associated with each stage in the natural succession: black bear in the deeper spruce, moose among the willows. In open forest migrating caribou fed on reindeer moss, the lichens *Cladonia.* Here a fire may damage their salad inasmuch as lichens may require 150 years to recover. But biologists do not know very much about fire ecology here. They, like geologists, archeologists, or almost any visitor to the area, leave the Brooks Range with a desire to return and learn more.

On another day we found ourselves headed down the Killik River, a tributary of the Colville River. An arm of the proposed park follows the river to the North Slope below the Arctic Foothills, thus completing a north-south transect of the geological and botanical provinces of the range. It also protects one of the most important migration routes for caribou. We followed the transect, which is zoned by temperature and moisture, from the boreal forest of the interior to the arctic tundra.

At the headwaters of the Killik River the bare structure of the Brooks Range lay exposed above tree line, layer after layer shuffled like a deck of cards by extensive faulting. An unlimited view of the terrain, and windswept ridges where snow does not bury forage in winter make the area ideal Dall sheep country. Shortly Charlie spotted the white forms of the sheep high on a mountainside where they could easily see an approaching wolf. The plane was a different matter, and they scurried beneath us from ledge to ledge.



These animals would be safe as long as they did not come close to hunting camps that dot the range in summer.

Today the Brooks Range supports one of the largest concentrations of Dall sheep in Alaska. Other areas are experiencing heavy hunting pressure, which is also increasing in the Brooks Range. About three hundred hunters enter each year, mostly through the lodge at Bettles, but only about eighty rams are taken. Under these conditions two of the three present park proposals would permit sport hunting as well as subsistence hunting by native inhabitants; only the Udall bill would ban sport hunting.

TODAY, anyone with the price of the ticket can in two days reach the heart of a country that until the recent oil boom was almost unknown to the outside world. The people most affected by this course of events live in the heart of the proposed Gates of the Arctic park—the Nunamiut in Anaktuvuk Pass. Their valley is ancient. The lower sediments of surrounding bluffs may be as old as 400 million years. Archeological digs have already yielded human remains dated between 6,000 and 16,000 B.C. Layers tell of a ten-thousand-year period of continuous occupation. Legend tells of both mixing and battles with neighboring Indian people called the Dihal Kutchin. The final battle took place near Tulugak Lake, in which the Eskimos drove the Indians farther east. Modern history reports a period of total desertion when the nomadic Eskimo hunters of caribou were lured to the coast by the luxuries of the white man's commerce. Influenza also took its toll. By 1920 the Brooks Range stood deserted. Then the few remaining Nunamiut moved back to the mountains. In 1939 thirteen families settled in Anaktuvuk Pass. Now these Eskimos, having given up their nomadic ways, hunt from permanent homes. I treasure the memory of a splendid day spent with these people, from whom we have so much to learn.

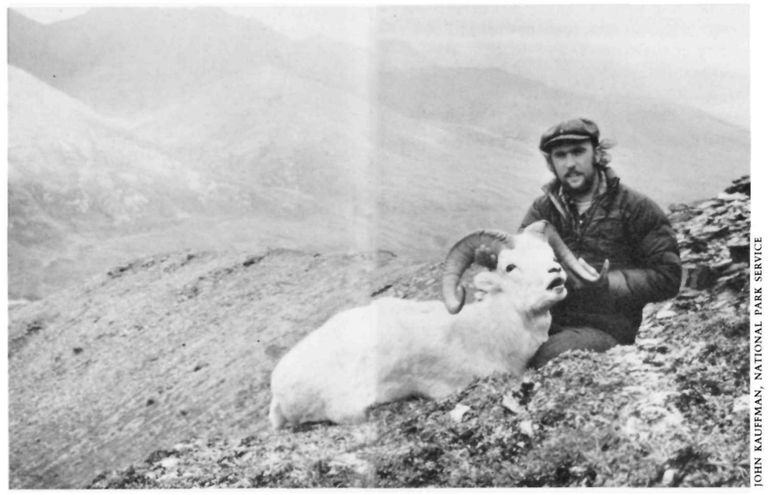
In 1935 when Shenandoah National Park was established, the government relocated mountain people who lived there out of the park. Today the presence of the Nunamiut in the Brooks Range has caused a further redefinition of the national park idea: Inasmuch as these people are as much a part of this land as Dall sheep, they will be encouraged to stay and follow their traditional lifestyle.

Within park boundaries the Nunamiut will select village and regional lands as provided by law, but much of the land over which caribou migrate will be in the national park. Although hunting is prohibited in national parks, subsistence hunting by the Nunamiut—the basis of their culture—will be allowed in Gates of the Arctic National Park. From this merging of land and human needs I feel that we as visitors will find our lives enriched.

NOW IT WAS TIME to journey to the trail's end. The entrances to most canyons of the south face of the Brooks Range look somewhat alike, but our pilot always managed to get us to the right one. Now we approached a lake in the South Fork of the Koyukuk, unnamed on the topographic sheets but locally called North Lake. We landed on this exquisite lake and tied up to a glacial moraine at the north end. Fuel drums left by a bush pilot lay in the grass, a common system of resupply in the Brooks Range, where gas pumps are scarce. Below the moraine, drumlin ponds were streaked by beaver. On the crest, aspen had begun to turn gold in August—a flash of post-summer joy before winter.

On shore we looked into the clear water to plants that sheltered delicate snails and an occasional fish. This fragility of design in a harsh climate also sparkled among reeds, grasses, and sedges bending along the lakeshore. From our vantage point at the lake we could see Bob Marshall's two sentinels:

The stark scenery is mellowed in the Alatna Valley (left) by the softness of the spruce forest and the wide, gentle oxbows of the Alatna River. The higher elevations above tree line in the park provide ideal Dall sheep habitat. The Udall proposal would ban sport hunting (below); the Interior proposal would allow regulated sport hunting; and the Young proposal would allow hunting per Alaska state law. The view at bottom looks south through "The Gates" from the confluence of Ernie Creek (center) and the North Fork of the Koyukuk (at left). Boreal is at left, Frigid Crags, at right.



JOHN KAUFFMAN, NATIONAL PARK SERVICE

Frigid Crags on the left and Boreal on the right. Through those gates one could go to the North Pole without a serious bump. It marked the end of the southland, the beginning of the Arctic.

Then we flew over the confluence of the Koyukuk River and Ernie Creek. Here shafts of sunlight touched this world of short season, storing energy in reindeer moss. The arctic caribou herd numbers 242,000. Shortly they would pour through the passes from the northern calving and feeding grounds to their winter range south of the mountains. Flying above the range, we saw a world of stark economy where a barren ground grizzly requires one hundred square miles for its sustenance and a wolf pack about the same.

ONCE, in talking with Freeman Tilden, patriarch of the National Park Service interpretive program, about the problem of access to the remote features of the new North Cascades National Park, I asked why we should set them aside if few people could see them. Freeman replied, "This is unimportant, Woody. They must be preserved simply because they are there."

I find this viewpoint highly civilized. We should honor our areas of superiority and dignity in both federal and state jurisdiction, wherever they lie. Now we must honor and preserve the splendid wilderness of the Gates of the Arctic, its wildlife, and the ancient lifestyle of the people who live there. ■

From 1972 to 1973 M. Woodbridge Williams was chief photographer of the Alaska Task Force of the Department of the Interior, which was studying public land in Alaska for inclusion in the National Park System. Woody has worked with the National Park Service for fourteen years, and before that with *National Geographic* for six years. His natural history photographs and writings have appeared in several national magazines, including *National Parks & Conservation Magazine.*

ROBERT BELOUS, NATIONAL PARK SERVICE

Elizabeth Taneak displays a ceremonial skin mask for the tourist trade, which is Anaktuvuk village's only commercial export. The Nunamiut derive their main subsistence from the land—especially caribou—and all park proposals would encourage them to continue their traditional lifestyle.

JAMESTOWN
Dawn of a New Era

The first permanent English outpost in the American wilderness was the precursor of a new nation

THE SETTLEMENT of the first English colony in the New World, at Jamestown, Virginia, has been called one of the great events in the history of the world. Certainly, the half-million visitors who come each year to Jamestown Island—a portion of Colonial National Historical Park that also includes Yorktown and the Colonial Parkway—and nearby state-run Jamestown Festival Park must marvel at the fortitude and courage of the first English settlers. For despite all odds and plagued by starvation, disease, and attacks by Indians, these men and women, so unprepared at first for wilderness living, became the progenitors of a new nation unlike any the world had ever seen.

WHEN the first Virginia charter received the great seal of England in 1606, the men who were to organize, finance, direct, and participate in the colonization of southern Virginia did not know what to expect from that unknown land. But they hoped that the colony would spread the word of Christ to the natives, add to the riches and power of the British Empire and of themselves, and challenge Spanish influence in the New World.

The 144 men who landed in Jamestown in May 1607 on the ships *Susan Constant, Godspeed,* and *Discovery* had every reason to be hopeful when they made their first explorations of the new land. The weather was warm, wildlife and timber were abundant, the soil seemed ripe for planting, and Indians were not numerous. But inexperience, poor planning, sickness, and death turned spring's promise of Eden into a summer, then a winter, of hell.

The first task of the settlers was to build a fort. The fort was triangular in shape with a church at the center surrounded by individual living quarters. The men built the structures of perishable materials—roofs of reeds, walls of saplings—and they chinked them with mud. The buildings were odd-shaped, determined by the size of the timbers. For want of nails, they used wooden wedges; for want of glass, they covered openings in the walls with shutters. Throughout the months when the fort was being built, the men, accustomed to the cool English climate, suffered from the sweltering heat and disease-carrying mosquitoes from nearby swamps. Later they would be plagued by the cold and damp of winter that was difficult to keep out of the primitive structures. Fire was both friend and foe. Although it provided warmth, it often destroyed whole buildings.

By the autumn of 1607 only fifty men had survived. Bickering, disagreements, and the unwillingness of many of the men to do their share of the work had created an organizational chaos. In the *Generall Historie of Virginia, New England, and the Summer Isles,* Captain John Smith and three other settlers of the first colony wrote:

> From May, to September [1607], those that escaped dying, lived upon sturgeon, and sea crabs, fifty in this time we buried. . . .
>
> But now was all our provision spent, the sturgeon gone, all helps abandoned, each hour expecting the fury of the savages; when God the patron of all good endeavors, in that desperate extremity so changed the hearts of the savages, that they brought such plenty of their fruits, and provision, as no man wanted.
>
> And now where some affirmed it was ill done of the council to send forth men so badly provided, this incontradictable reason will show them plainly they are too ill advised to nourish such ill conceits; first, the fault of our going was our own, what could be thought fitting or necessary we had; but [of] what we should find, or want, or where we should be, we were all ignorant, and supposing to make our passage in two months, with victual to live, and the advantage of the spring to work, we were at sea five months, where we both spent our victual and lost the opportunity of the time and season to plant, by the unskillful presumption of our ignorant transporters, that understood not at all, what they undertook.

THE NEED to plant and to build adequate shelter was given secondary consideration during the first year because of demands from investors in England that marketable goods be returned to the Mother country. During the spring of 1608, when preparations for planting should have been made, the settlers spent their time turning cedar logs into clapboards for sale in England.

Captain John Smith finally took control of the government in September 1608. Under his direction improvements to the fort were made. About that same time a second supply of food and goods arrived with seventy new settlers, among whom were the first two women to come to Jamestown. Also among the settlers were workmen who would produce such items as glass for sale in England.

Although little progress was made between 1607 and 1609, wholesale starvation was avoided because of trading between John Smith and the Indians, most notably the powerful chief Powhatan, father of Pocahontas. In fact, were it not for the Indians, who pro-

This series of Bicentennial articles will trace some of the events and diverse cultural influences that forged the distinctive character of our nation—and, as elements of our rich American historic heritage, are represented in the National Park System.

vided and traded for food and taught the Englishmen how to eat and plant corn, it is doubtful that the colony would have survived.

Life was not easy and supplies were low, but by mid-1609 the small colony was at least holding its own. A good fall harvest might have ensured success, but in August a third supply of four hundred settlers arrived, bringing with them disaster.

THE NEW ARRIVALS from England brought with them damaged supplies, disease, and anarchy. Richard Potts, Clerk of the Council, and two other settlers wrote of the new arrivals in the *Generall Historie:*

> . . . receiving them as our countrymen and friends they did what they could to murder our President [Smith], to surprise the store, the fort, and our lodgings, to usurp the government, and make us all their servants and slaves, till they could consume us and our remembrance; and rather indeed to supplant us than supply us. . . .
>
> To a thousand mischiefs those lewd captains led this lewd company, wherein were many unruly gallants packed thither by their friends to escape ill destinies, and those would dispose and determine of the government sometimes to one, the next day to another. . . .

The arrival of this "lewd company," bickering over leadership, and finally Captain Smith's injury by burning gunpowder and subsequent return to England led to the terrible "starving time" of the winter of 1609–10 when disease, malnutrition, and Indian arrows claimed the lives of 440 of the 500 settlers. The Indians, who might have been the settlers' salvation again, became openly hostile—perhaps because with Smith gone the settlers had begun to rely increasingly on the use of force and weapons in their dealings with the Indians.

By the end of the winter the sixty survivors understandably wanted to abandon the colony. But in May 1610, Sir Thomas Gates, the new governor of Virginia, and other settlers arrived in Jamestown. Their ship had been part of the third supply and had been thought lost at sea. Instead, the ship had wrecked on the coast of Bermuda, and the survivors had spent the past year building two boats to reach their original destination. With the arrival of Gates and a month later Lord Delaware from England, the settlement was saved.

One of the passengers on the boats from Bermuda was John Rolfe, who was to be instrumental in turning the desolation of James-

Once Jamestown had survived the first difficult years of settlement, the city began to grow outside the original fort area. This painting depicts Jamestown as it might have looked in 1619, with two rows of houses, a church, and cleared land for farming. Though never a big city, Jamestown was the center of social, political, and cultural life in Virginia until the late 1600s; but the town quickly declined after the capital of the colony was moved to Williamsburg in 1700.

The form of government that we now enjoy began in this country July 30, 1619, when the first legislative assembly in America met in the church at Jamestown.

town's early days into prosperity. Rolfe introduced the cultivation of tobacco. Seeds from Trinidad and Venezuela were crossbred with native tobacco plants, and soon the newly developed Virginia leaf was being exported. The success of tobacco in the fields and the marketplace destined not only Jamestown but later all of Virginia to an agrarian economy. "This vile weed," so-called by King James, became the salvation of the English colonial effort in Virginia and the basis of the slave–plantation system that would develop decades later.

The marriage of Rolfe and the Indian princess Pocahontas in 1614 relieved tensions between the settlers and the natives for many years, thus helping to ensure the success of the Jamestown colony.

As Jamestown prospered, the city expanded outside the boundaries of the old fort. At the same time, Jamestown's historical significance grew. In 1619, the first legislative body in the New World assembled, heralding a new era of representative government for the colonists. In that same year, twenty Negroes from the West Indies arrived in a Dutch ship. Some of these new arrivals found homes for themselves, and others worked as indentured servants in the same way that many white men had worked for a place in the New World. This first arrival of Negroes would come to be seen as a fateful event in the later establishment of slavery.

The population of Jamestown never numbered more than five hundred; but the city was the center of political, social, and cultural life of Virginia until the late 1600s.

ALTHOUGH now you must use your imagination at Jamestown to picture what the buildings must have looked like (only foundations remain), the scale and setting of the place are evocative. Overlooking the James River, the town has an intimate feeling about it—narrow dirt roads, foundations close together. One can easily imagine townspeople chatting as they walked to church service on a quiet Sunday morning, or women exchanging news and goods amid the bustle of the marketplace, or farmers tending their small plots while sheep grazed nearby. In peaceful times it must have been a lovely place to live.

But life in the colony was far from idyllic. The Jamestown colonists were largely self-sufficient, producing their own food, cloth, pottery, furniture, tools, brick and tiles, and many household items. Medical science was primitive, and by modern standards mortality was high. In addition to the demands of everyday life, conflicts with Indians were frequent, and fire continued to strike without warning. Settlers often wrote of the damage done by fire to the growing town.

In 1676 a rebellion against the tyrannical royal governor Sir William Berkeley, led by Nathaniel Bacon, resulted in the burning of the entire town. Although the town was rebuilt, a fire that razed the fourth statehouse triggered the Virginia Assembly to move the capital in 1700 to Middle Plantation—now known as Williamsburg. Jamestown declined rapidly thereafter and was eventually abandoned. After 1700 land around Jamestown was consolidated into the hands of a few wealthy landowners. The ruins of the Jaquelin-Ambler house are all that remain of the plantation period in the national historical park.

In addition to the old townsite, archeological exhibits, a scale-model reconstruction of the old fort, a reconstructed working glass furnace, and other supplementary exhibits at the national historical park visitor center help the visitor understand Jamestown and its history. Colonial Williamsburg, ten miles from Jamestown on the Colonial Parkway, is a privately run historical exhibit that gives the visitor an understanding of colonial life in the eighteenth century. State-run Jamestown Festival Park, about a mile from Jamestown National Historical Park, displays a full-scale reconstruction of the original fort and full-scale replicas of the first three ships to land in Jamestown. A visit to this park greatly enhances one's understanding of the early years at Jamestown—the birthplace of a new era in world history. ■

COPING WITH PARSIMONY AT GREAT SMOKY

Testimony on the effects of budget cuts and personnel ceilings at Great Smoky Mountains National Park from 1971 through 1975

by BOYD EVISON

AS A CONSEQUENCE of NPCA's long campaign protesting budgetary restrictions and low personnel ceilings imposed on the natural resource agencies by the President's Office of Management and Budget (OMB) and the shocking results of NPCA's field survey in 1975 of effects on the National Park System of these restrictions, congressional oversight hearings were called to investigate these charges.

In testimony on invitation in December 1975 NPCA presented a summary of its 1975 Park Resource Survey before the House Subcommittee on Conservation, Energy, and Natural Resources of the Committee on Government Operations. The summary was also printed in the Magazine in two parts in February and March 1976.

Also invited to testify in December regarding specific effects on their parks were four National Park Service superintendents. The testimony of Boyd Evison, Superintendent of Great Smoky Mountains National Park in North Carolina and Tennessee, printed here represents in detail the story told again and again about national parks and monuments across the nation by these superintendents and by respondents to NPCA's park survey.

NPCA considers this situation a national disgrace that must be corrected if our country's priceless heritage of national natural and historic treasures is to be saved.

At Great Smoky Mountains National Park a 25 percent increase in visitation means a 25 percent increase in use of toilet paper and restroom cleanups and a 15 percent increase in the frequency with which roads need resurfacing, as well as increased needs in other services; but funding and numbers of personnel allocated to the Park Service have not kept pace with increased visitation.

GREAT SMOKY MOUNTAINS is a one-half-million-acre national park established in 1934 to preserve extraordinary resources for enjoyment by all Americans for all time—and for its value in scientific study—in a world in which undisturbed ecosystems are increasingly rare. Great Smoky Mountains is the most visited of all the national parks, yet it offers sanctuary for plants, for animals, and for human beings, of a sort not duplicated anywhere else. The park embraces the most extensive undisturbed hardwood forest in the United States—perhaps in the world. Within its boundaries are potential wilderness lands unmatched by anything else in the temperate areas of the eastern United States. Thanks to the park's topography and climatic factors, the diversity of its plant and animal life is world famous. But the park is far more than an agglomeration of exceptional resources. Above all else, it represents options for distinctive human experience and for the expansion of our knowledge of the environment and its potential benefits to us. As Superintendent of the park, I am responsible for seeing that its resources are not irreversibly impaired, and that options for human experience that cannot be afforded anywhere else are not foregone in exchange for activities or services that may be more popular, but can be provided elsewhere without such forfeiture. . . .

Following is an analysis of the additional budget and personnel needs that have resulted from increased visitor use in the past ten years and the specific park management problems that have resulted from budget and personnel ceilings.

MANAGEMENT PROBLEMS. Visitor use of Great Smoky Mountains National Park has increased by 25 percent since 1966. Personnel and budget needs did not rise in direct proportion to the increase in use, given the same *kinds* of use. But they do increase; and certain kinds of use that have increased greatly require more money and manpower, per unit of use, for proper management.

My Chief of Maintenance tells me that a 25 percent increase in use of the same paved roads will result in about

a 15 percent increase in the frequency with which the roads must be resurfaced, given existing conditions. Although Americans seem more conscientious about litter than they were ten years ago, 8½ million visits result in substantially more roadside litter than did 6 million, so more frequent cleanup should be performed. Litter breeds littering.

Increases in visitor use require directly proportionate increases in the need for certain supplies and services. Twenty-five percent more visits means about 25 percent more toilet paper and more restroom cleanups by almost the same percentage.

Increased traffic means *at least* a direct increase in the need for regulation by park rangers, and more mishaps are a certainty. As road surfaces deteriorate with the lack of adequate attention, accident rates rise. More and more ranger time is devoted to traffic control and accident investigation.

Poachers—whose citizen band radios are tuned in to our system—are well aware of the demands placed on rangers by the traffic and associated problems. Their activities are stepped up, and protection personnel commonly donate many hours to the pursuit of those who help themselves to bears, deer, raccoons, foxes, squirrels, grouse, and various rare plants from the park.

Campgrounds run full every night during the summer, and their occupants are not just Ma and Pa and the kids. They are, more and more, people from every stratum of American life—more young people whose lifestyles sometimes clash with those of traditional family groups (and who, in many cases, are our most conscientious and perceptive visitors); and more urbanites, bringing with them many of the problems of the cities, and who are frequently bewildered by the special demands of getting along in a park, in a tent, or on a trail.

Meanwhile, enormously greater numbers of visitors are taking to the backcountry. They are drawn particularly to the Appalachian Trail, partly because it is well known in its own right, partly because it traverses some of the park's most scenic country (and the heart of its virgin forests), and partly because of the fourteen shelters

Use of backcountry, the best way to experience Great Smoky's uniqueness and diversity, has increased enormously in the past five years, but backcountry management has had to be neglected in favor of overwhelming numbers of visitors in automobiles.

scattered at convenient intervals along its 72-mile length within the park. Other trails are particularly popular with horseback riders; and several commercial organizations, as permittees, depend heavily on use of those trails for their livelihood. Estimates are that the maintenance of trails for horse use runs about ten times as much, per person, as for foot use. The results are that certain trails have become badly eroded and unsightly, dangerous, and thoroughly disruptive to the ecosystems that they affect.

Proper management of backcountry use requires more money and time, per user, than does management of roadways. Backcountry use, however, is the use that brings visitors most directly in contact with what the park is all about—the places in which one may experience things *not* to be found elsewhere in the nation. The 700,000 hikers don't match 8 million autoriders, in terms of numbers needing attention; so the backcountry has been neglected. Measures aimed at better distributing backcountry use and at assuring more responsible behavior by the users require personnel and money for informing, checking out, monitoring, and giving field guidance or emergency assistance. We have asked for six additional permanent positions to help meet these needs. Instead, our full-time protection force has been decreased by seven positions since 1966. Some of the slack can be taken up by hiring more seasonal employees and additional less-than-full-time permanent employees. But trail use is a year-round phenomenon, and some of our most serious problems arise during periods of lighter use (November through February). Meanwhile, other demands on ranger time mount higher.

The European wild pig has spread steadily across the park from west to east and in the past two years has been observed in all but a few small sections. Control of these animals has been limited essentially to what rangers could handle incidentally, in the course of attending to other duties. Money was requested for two control and research teams to deal with the wild pig problems. With luck, we will get it for *one* team next year. So I have diverted attention from some other concerns, and we are fielding one such team now. Every day wasted is another unknown number of acres ripped to shreds by the pigs—at costs to rare plants and animals, to stream quality, to fish populations, to entire ecosystems that we have barely begun to even *try* to understand.

Our neighbors offer help. They'll gladly kill the pigs for us. We may eventually have to resort to use of non–Park Service hunters. But most boar hunters are also bear hunters—or deer, coon, fox, or bobcat hunters. So that presents real problems, and until we have learned more than we now know about our wild pig population, I'm not inclined to invite help from outside.

The rangers who face all these increased demands are *not* cops. They are conservation officers, and they are expected to help the public understand and enjoy the unique resources of the park. But the person who handled a traffic fatality yesterday evening, sat through half the night at a poacher's bait station, and heard the morning's complaints about a pot (or beer) party in the campground is not your ideal ambassador of goodwill this afternoon.

The effects of understaffing and underfunding go even further, though. Not only do they result in impairment of the resources and reduction of key services; they also lead us, all too often, to rely on operation methods that impinge directly on the special

qualities that Great Smokies, and only Great Smokies, has any hope of preserving. In the interest of efficiency, we feel compelled to use motor vehicles and other mechanized equipment to provide access and to maintain trails and shelters—in areas where sanctuary from the sights, sounds, and smells of such equipment is one of the park's most precious commodities. And although my inclination is to reduce other services, and even close down existing facilities to make possible the less efficient but more appropriate kinds of administrative access to and maintenance of the backcountry resources, we are so far short, at present levels, that any reasonable reductions are not likely to leave our people with the necessary time available for nonintrusive backcountry support services.

HOW WE COPE. The park has tried to cope with these problems in a number of ways, some of which, of course, generate problems of their own.

We have successfully contracted for trash collection in the park at a cost probably comparable to what we could collect it for ourselves. We have also contracted, with similar success, for the striping of our roads. Efforts at contracting for roadside cleanup failed, as no one bid for the work. We are considering contracting for janitorial services, but we have personnel to consider—and a union to deal with. It seems unlikely that such services can be provided as inexpensively by contract as they can by our own personnel. We have increased the number of seasonal employees used. Up to a point, this makes very good sense. We are a year-round park, but by far our heaviest use months are April through October. Much of what you see on the accompanying table, though, represents an increase in numbers that is out of proportion to the increase in *person-years* of seasonal employee time, as the turnover is high in this category, and we must hire different people in each season. The latter situation is the result of the effects of vacation time (most of our summer seasonals are students or teachers) and of limitations on the length of seasonal employment. Such turnover places huge demands on training, uniform

Personnel and Budget Allocations in Great Smoky Mountains National Park, 1971–1975

	1971	1972	1973	1974	1975
			Personnel Allocations		
Permanent personnel on rolls June 30	121	116	105	112	107
Part-time and subject-to-furlough employees	0	1	13	38	31
True seasonal employees	123	149	157	145	158
Total	244	266	275	295	296
Permanent personnel requested	140	146	160	120	138
Permanent positions received	127	122	113	115	126
Shortage	13	24	47	5	12
Man-years seasonal personnel requested	180.5	181.0	197.4	179.7	196.1
Man-years seasonal personnel received	74.2	60.8	65.7	90.5	87.8
Shortage	106.3	120.2	131.7	89.2	197.5
			Budget Allocations		
Budget requested	3,841,557	4,040,400	4,762,600	4,904,700	5,354,400
Budget received*	1,939,900	2,119,900	2,507,300	2,813,400	3,247,300
Shortage	1,901,657	1,920,500	2,255,300	2,091,300	2,107,100

*Over the past five years a total increase of $1,307,400 has been received. Of this amount $532,400 has been Wageboard increase, and $224,500 has been Federal Classified Pay increase, or a total in pay increases of $756,900. The cost of supplies, materials, and equipment has risen from $220,300 to $644,030 in that same period. Thus we are operating with what amounts to a $126,000 increase, to cover such items as increased travel, rent, communications, and other costs of services. And we didn't have enough to do it right even in 1971.

The European wild pig, an exotic species, is extremely destructive (note ground around cage), but adequate funds are unavailable to deal with this problem.

PHOTOGRAPHS BY CLAIR BURKET, NATIONAL PARK SERVICE

costs, and administrative support compared with permanent employees.

We have resorted to the use of less-than-full-time employees for several reasons. First, we can put people to work during peak months and furlough them at low-use times; second, we have not been permitted to fill full-time permanent slots, as the positions have been needed in other places—such as new areas and "Bicentennial parks." The net time available to us in permanent, repeat employees is roughly the same, with 31 part-time and subject-to-furlough employees added, as it was when we had 14 more permanent full-time people than we do now (1971–1975 comparison).

We depend heavily on volunteers for such things as backcountry patrol and special interpretive and information services. Last year, 60 Volunteers in Parks (VIPs) contributed 14,000 hours of work to the park. This cost us relatively little in terms of support service, uniforms, quarters, and supplies. It does require more than the usual amount of supervision to make proper use of volunteer services, because volunteers don't have the same ties and responsibility as paid employees do, and because the same amount of training time *should* be given a person who works only ten hours a month as one who works full time. He or she needs to know and to be able to do most of the same things. There are many duties that VIPs *cannot* legally perform, such as law enforcement and maintenance. So gaps still are left.

Poaching in the park has been stepped up because rangers are busy coping with traffic and associated problems and do not have enough time to track down poachers. Routinely, protection personnel donate their off-hours time to pursue illegal hunters who poach bears, deer, squirrels, grouse, foxes, raccoons, and rare plants in the park.

Our Natural History Association employs about twice as many seasonal people for interpretation and information services as our Interpretive Division does. It is only by this means that we are able to reach a reasonable share of our visitors with important personal service interpretation, particularly in the living history field. I have some misgivings about our dependence on returns from the Association for performance of normal interpretive functions.

The Youth Conservation Corps operates a 55-person camp in the park each summer and performs substantial maintenance functions—trail work, fencing, erosion control, and so forth. The effect of the overall maintenance problem is slight, though.

The Job Corps Center at Oconaluftee has evolved from a conservation-project orientation to one that concentrates on training. They do help us by building certain facilities that we might otherwise have to tie up our own personnel with, or contract for. Their training emphasis rules out their use on projects requiring tight scheduling, however; and they do not provide routine operation services.

Regarding the effects of the Bicentennial, I doubt that it will greatly affect visitation to Great Smoky Mountains National Park. There may be some increased interest in our pioneer history zones and relics, although an era much more recent than the American Revolution is represented by the historic resources of Great Smokies.

We don't believe that the flow of visitors to major Bicentennial attractions will substantially affect us. We *do* expect visitation to rise, though.

Although it may seem that increased budget and various means of compensation for decreased permanent staffing might have enabled us to hold our own, even in the face of heavier use, this is far from true. We would be fallin g behind even if we hadn't *started out* behind, because of increasing demands. But year after year of operation at less than adequate levels of resource protection and maintenance has an accumulative effect that soon approaches disastrous proportions.

Historic structures that we are legally obligated to preserve are not being preserved, and the cost of halting their decay skyrockets with each added year of neglect. It would take $2 million to $3 million to bring them to a proper state of preservation. Undermaintained roads become downright unsafe. I probably should close the Newfound Gap Road every time it rains, but I doubt that anyone would like the results. Nevertheless, the surface of some sections of that road becomes the rough equivalent of ice every time it is wet. It would cost about $1.5 million to bring that road to safe standards. The thirty-five water systems built in the 1930s would take $350,000 to $500,000 to bring to current federal and state standards. Neglected backcountry resources and inadequate attention to the inroads of the thoughtless or the criminal who destroy or remove endangered plant species and rare animals mean ecosystems so altered that they no longer have the scientific value that they should; and they mean irretrievable losses in the quality of visitor experiences. Estimates two years ago indicated the need for an investment of more than $2 million *just to catch up* with the trail erosion problems generated by years of shoestring operation.

We have nothing to indicate that we'll receive any money to correct these deficiencies, through FY 1977, except $120,000 for historic preservation. We got $8,000 for it this year.

FUTURE PLANS. Since I became Superintendent of Great Smoky

Mountains on July 1, 1975, I have been discussing with my staff various means by which we might reduce our expenditures of person-hours, money, equipment, and energy resources while maintaining or improving the level of resource protection and visitor safety—if possible, with little or no reduction in the quantity or quality of visitor services. We have now developed plans by which we will reduce the extent of mowing along roadsides and around some buildings; reduce the clearances to which some of our 700 miles of maintained trails are kept free of vegetation; extend closure times for certain seasonal roads, picnic areas, campgrounds, and visitor contact facilities; discontinue the practice of placing paper towels in comfort stations; remove all electric services from 52 comfort stations at various campgrounds and picnic areas; and extend the period during which electrical service is not furnished in various other facilities in the park. We are seriously considering the conversion of a number of special-purpose roads to trails, while assuring that the experiences afforded by automobile use of those roads in the past could be matched by use of remaining similar roads. We propose to place less emphasis on enforcement of laws having relatively little to do with the protection of native resources or visitors and more emphasis on those with which we may protect the visitor, the natural and historical resources of the park, and the quality of visitors' experiences.

Much of our effectiveness depends on helping people to enjoy the park more—but to do so in ways having less physical effect on its resources and less intrusion on the experiences of others. Use can be direct and physical, or indirect and intellectual. There are obviously differences in the impacts of different kinds of use. Many of our problems are generated by our inability, so far, to convey effectively to all our users a genuine understanding of the good they can derive from the park and of the ways in which they can use it without impairing its resources or the quality of other users' experiences. So the temptation to cut back on interpretation and information is dangerous. We probably must simply become more effective communicators of values and sharpeners of perception, even if it must be at the cost of traditional forms of interpretation. Much of our interpretive effort has traditionally been directed at people who were already "tuned in" to what the park represents—a form of preaching to the saved. We are now in the process of drawing up a program by which we may reach a far larger share of our visitors with the means of better understanding and enjoying what the park has to offer, by use of mass media, advance information services, and in-park radio interpretation. Done properly, this program should result in reduced operating costs, better dispersal of users of the park, more even distribution of use through the year, better assurance of resource integrity, and a greatly increased net level of visitor satisfaction.

Historic structures, such as the Walker sisters' cabin, are rapidly deteriorating for lack of funds to preserve them; and the cost of halting their decay skyrockets with each added year of neglect.

Those are the ideals, the things we strive for. We may fail, but we can certainly give it a try. It won't be easy. Our seasonal interpretive force declined by three positions this year and probably must be cut further next summer. In April, May, September, and October 1975, while there were 2,855,100 visits to the park, we had virtually no scheduled interpretive programs funded with the appropriated money.

ANY DECLINE in the quality of visitor services and resource management (which includes maintenance) has an insidious effect extending far beyond what is immediately visible. To a far greater extent than I think most of us have ever realized, we communicate with the public—and thus influence their behavior—more powerfully by the ways in which we show our concern for park resources and for the quality of visitor experiences, than we ever will with anything that might be described as "conservation messages." In parks the medium most assuredly *is* the message. Rotting historic structures, rampant exotics, rutted trails, and littered roadsides tell the public that America doesn't care enough to husband its most distinctive natural and historic resources. Why, then, should the recipients of such messages treat those resources with care? Neglect begets neglect. The results are costly. The costs are not only in terms of dollars nor of manpower. Perhaps the most serious costs are in terms of resources irretrievably impaired, and of experiences forever lost. ■

Boyd Evison is Superintendent of Great Smoky Mountains National Park. Before assuming that job, he had been Superintendent at the Albright Training Center at Grand Canyon National Park, and at Saguaro National Monument; and Assistant Superintendent at Grand Teton National Park. Prior to that he worked at a variety of assignments with the Park Service at headquarters in Washington, D.C.

SERPENT or SUPERMARKET?

The brightly hued San Francisco garter snake is losing ground as its habitat is destroyed by housing developments and shopping centers

by STANLEY MEDDERS

JUST ACROSS the San Francisco County line in Daly City once was an extensive region of twisted toyons and gnarled oaks growing on the red hillsides, and dense grassy meadows were dotted with glistening ponds fringed with reeds and cattails.

Twenty years ago I used to take my children there almost every day after work; and when dusk turned the landscape gray and low swirls of fog moved in from the nearby Pacific Ocean, we watched black phoebes darting from the tules in pursuit of insects, and brown bitterns cautiously beginning their nightly feeding. As we walked along the edge of a pond, shy garter snakes, often scores of them, slipped quickly into the water and disappeared noiselessly among the reeds.

Now those meadows and ponds no longer exist. In their place are seemingly endless rows of tract homes, vast shopping centers, restaurants, and service stations. With the destruction of this unexcelled habitat, one of the largest known populations of the beautiful San Francisco garter snake—probably as many as half of all those existing—disappeared forever as they and their ponds were buried beneath tons of landfill.

ENDANGERED TODAY because of this and similar destruction, *Thamnophis sirtalis tetrataenia* is by far the most beautiful of American snakes. The top of his head is red; his eyes are cinnamon colored; and a wide middorsal stripe, greenish yellow edged with black, runs almost the entire length of his body. On each side of the dorsal stripe are broad red stripes bordered with black. The sides of his tail are marked with alternating black and red bars, the belly is turquoise blue, and the throat is almost pure white. Adults are about four feet long.

Although he is called the San Francisco garter snake, *tetrataenia* exists only in San Mateo County, which is bordered on the north by San Francisco, on the west by the Pacific Ocean, and on the east by San Francisco Bay. Suitable habitat, in the form of several lakes and reservoirs, does exist in San Francisco, but for some reason the snakes either never found their way to them or abandoned them centuries ago.

In San Mateo County, only sixteen populations of this snake are currently known. These colonies, most of them composed of fewer than fifty adults, occur mainly along the east slope of the Santa Cruz Mountains and along the coast as far south as Point Año Nuevo. Favored habitat is dense vegetation that borders ponds, lakes, and creeks; but the snakes also live in marshy spots both inland and along coastal estuaries.

In these areas, not numerous in the county, *tetrataenia* inhabits the weedy banks, ordinarily within a few yards of the water's edge. When disturbed, he slips into the water, usually disappearing completely but occasionally swimming away quickly with his head above the surface. Sometimes, if surprised while basking in the sun, he will seek escape in a rodent hole beneath a lupine or coyote bush.

Little is known of these snakes' breeding habits, but herpetologists believe they mate once a year. Although broods are large, few of the young reach adulthood because the mortality rate among the newborn is high.

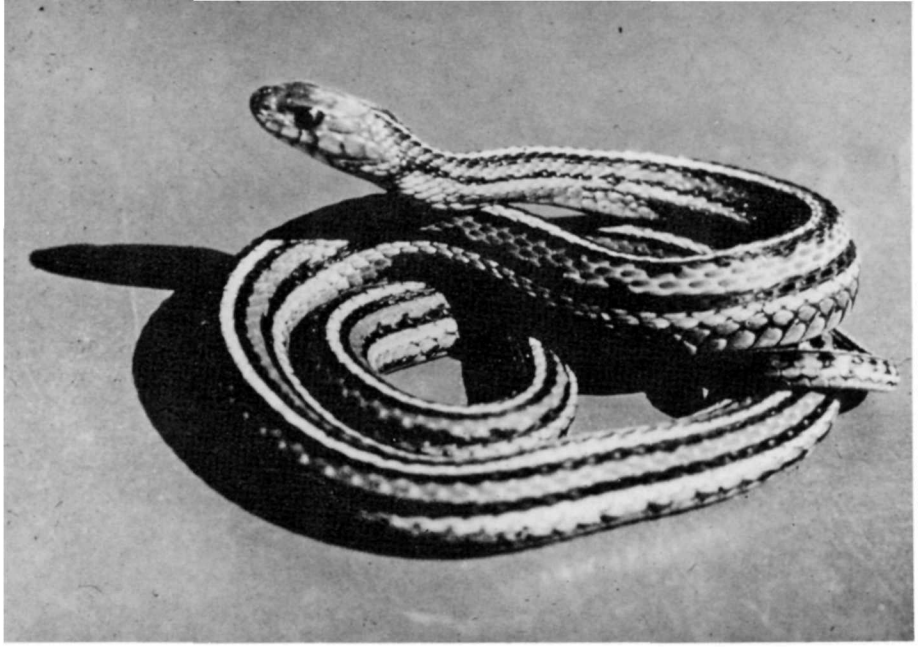
The diet of *tetrataenia* consists for the most part of frogs and possibly insects and small water animals.

Unlike many other snakes, *tetrataenia* often wanders far from his native range, frequently moving not only a long way from his home pond, but, at least for a time, distant from all aquatic areas. In fact, it is common for these attractive reptiles to take up residence at water areas other than their native pond or lake.

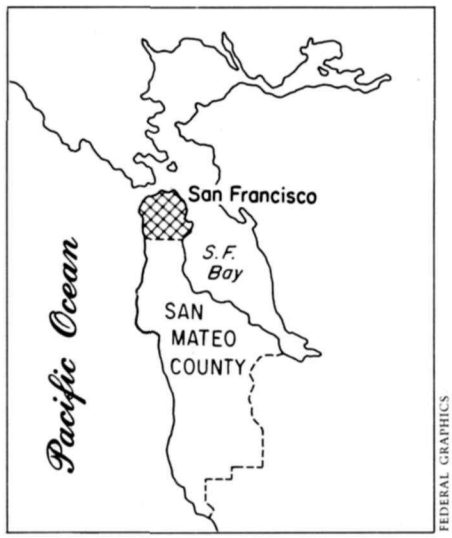
In view of this wanderlust, it would seem that the San Francisco garter snake would colonize other counties, particularly in open areas to the south. But such is not the case, and today's small populations still remain within the ancestral boundaries.

In this restricted area, the largest colonies inhabit the San Francisco watershed region, a system of beautiful lakes, brushland, and forests owned by the San Francisco Water Company—all fenced and closed to the public—and the Sharp Park Golf Course in Pacifica. This latter habitat consists of a series of ponds surrounded by tules, cattails, toyons, cypresses, and bush lupine.

Although the watershed area is well protected from the public, the golf course habitat receives heavy visitor pressure. Pollutants wash down from the foothills; and golf course personnel, using mechanized equipment, often destroy large areas of reeds, used as escape cover by the snakes, when they clear the ponds of algae.



JOHN BRODE, CALIFORNIA DEPT. OF FISH & GAME



FEDERAL GRAPHICS

Coastal areas to the south, where suitable garter snake habitat consists of a few creeks and brackish estuaries, are probably the most threatened. Inland San Mateo County has already been developed to full capacity; now the coastal region, fairly safe until recently because of poor weather and limited accessibility, is beginning to be developed. Inasmuch as one freeway already joins the area with San Francisco to the north, housing tracts and shopping centers have begun to mushroom all along the coast. A proposed freeway, cutting through the heart of *tetrataenia* territory, will soon link the coastside and inland cities to the east. This construction will bring an onslaught of people to remaining open space along the coast, which is certain to have a devastating effect on the garter snake's limited coastal habitat.

INASMUCH AS *tetrataenia* is officially listed as endangered by the Department of the Interior, strong protective measures are available to preserve it. Under the Endangered Species Act of 1973 it is unlawful for *anyone* to "take" any endangered species without a permit for scientific, propagational, or other purpose to enhance the survival of the species. The term "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" is defined to mean "an act or omission which actually injures or kills wildlife, including acts which annoy it to such an extent as to significantly disrupt essential behavioral patterns, which include, but are not limited to, breeding, feeding or sheltering; significant environmental modification or degradation which has such effects is included within the meaning of 'harm.'" Under these definitions, then, developers and highway builders must carry out their activities without significantly disrupting essential behavioral patterns of endangered species; otherwise they may be prosecuted for their acts. Moreover, no actions authorized, funded, or carried out by any federal department or agency may jeopardize the "continued existence" of any endangered or threatened species. Furthermore, once "critical habitat" of an endangered species has been officially determined and declared by the Department of the Interior, such actions may not be taken if they would result in the destruction or modification of *any* critical habitat of such species. (That means highways built even partially with federal funds, federal permits to fill in wetlands, or federally insured loans.) Thus the means are available to preserve San Francisco garter snake habitat—if officials can be encouraged and supported by a concerned citizenry to *enforce* the law.

Because the current population of *tetrataenia* is estimated at fewer than 1,000, it is imperative that all protective measures be enforced immediately to save this strikingly beautiful little reptile from impending extinction. ■

A native Californian and frequent contributor to these pages, Stanley Medders has published about twenty articles on rare and endangered species of the West.

SAVE THE SNAKE

The Department of the Interior has not yet officially declared "critical habitat" for the San Francisco garter snake. It is imperative that this be done to provide yet a stronger measure with which to protect *tetrataenia.* Concerned members should urge determination and declaration of critical habitat of the San Francisco garter snake without delay:

Mr. Keith M. Schreiner
Associate Director
U.S. Fish & Wildlife Service
Department of the Interior
Washington, D.C. 20240

Also urge strict enforcement of the Endangered Species Act for the San Francisco garter snake:

Mr. R. Kahler Martinson
Director, Pacific Region
U.S. Fish & Wildlife Service
1500 Plaza Building
1500 N.E. Irving Street
Portland, OR 97208

NPCA at work

YOSEMITE

The Preservation Mandate

In late 1975 the National Park Service (NPS) moved into the second phase of a unique project that is involving thousands of Americans in planning for the future of Yosemite National Park, California. The Service distributed workbooks on alternatives for management of the park to approximately 60,000 individuals and organizations.

More than 19,000 people had participated in an earlier phase of planning that involved workshops in thirty-six cities this past summer. Management choices in the workbooks covered the views expressed at workshops and thus ranged from preserving Yosemite and returning overused areas to a natural state to running the national park like a concessioner's dream come true.

In consideration of the latter end of the management spectrum, in submitting a workbook on behalf of this Association, NPCA staff felt compelled to comment on the overall planning process. NPCA told the Yosemite Planning Team that the range of alternatives extends beyond the legal limits of choices that are available to the Park Service because some of the choices would violate the intent of the 1916 law that mandates that NPS preserve national parks in an unimpaired state for the enjoyment of future generations.

NPCA lauded the high level of public participation that has been generated for the Yosemite planning process but at the same time emphasized that legally preservation must take precedence over use of the national park even though some citizens might favor heavier use and development.

During 1976 the planning team reportedly will fashion an environmental assessment and a Yosemite draft master plan—a plan guiding long-range management of the national park—after considering the workbook responses and other public input. NPCA noted that there is a possibility that a large number of respondents—unaware of the differences in purpose between national parks and other public lands or unconcerned about the 1916 preservation mandate—might choose unacceptable alternatives. (The concessioner in the park, Yosemite Park and Curry Company, owned by MCA-Universal, sent out thousands of letters requesting responses to the worksheets, and later printed up and mailed out copies of its own choices for Yosemite's future. As a matter of fact, the new Yosemite planning process was developed on the heels of a storm of protest over a previous draft master plan that reflected MCA plans to commercialize Yosemite.)

In any case, the Park Service should not be influenced by the weight of public opinion to stray from its mission, and NPCA pointed out that people disgruntled at having their master plan choices rejected by NPS might generate legal or legislative delays to implementation of a master plan for the park. Perhaps this planning process is too extensive.

NPCA's recent input into the second planning stage reflected our continuing assertion that the key to the future of Yosemite lies in the type of transportation system adopted. Visitor use, park management, and park operations all hinge upon the decisions made regarding transportation. An essential step, NPCA maintains, is total elimination of private automobiles from within this national park, which suffers from overuse. (Yosemite had 2.6 million visits in 1975.) Furthermore, this step must be taken in conjunction with development of public transportation systems out to, into, and within the park.

By facilitating reaching the various entranceways to Yosemite through public transportation, NPCA suggested that a regional airport at Mariposa, reintroduction of rail access from Merced to El Portal, and the development of regular bus service from major population and air terminal centers in California would greatly reduce the need for cars.

In addition, NPS should develop major park staging areas in Mariposa, Oakhurst, and Lee Vining where visitors would be required to leave their private vehicles. Transportation from these areas, NPCA stated, should be by buses spacious enough for storage of a visitor's equipment and supplies. The park visitor would pay a nominal fee for the ride. At the same time, the shuttle system within the park must be expanded.

These staging areas should also provide the visitor with park interpretive materials and, through private enterprise, a wide range of supplies and services. This procedure would serve not only to improve the local economy but to remove the necessity for providing these supplies and services within the national park.

NPCA carefully studied the impacts of various uses of the park and park facilities. Mechanized recreation facilities for downhill skiing at Badger Pass should be totally eliminated from the park, NPCA stated, although the lodge could still be used by cross-country skiers.

However, NPCA pointed out that in conjunction with these changes, it would be essential for the Park Service to develop an information network whereby when the park is filled to capacity, additional persons seeking entry would be given complete information and reservation services on camping and accommodations available throughout the surrounding region. NPS could accomplish such through cooperative agreements with the U.S. Forest Service and private recreational industries.

In terms of park operations, as a long-range goal, NPCA would prefer to have park headquarters, offices, maintenance and warehouse facilities, concession offices, all concession employee housing, and NPS employee housing relocated in selected areas on the periphery of the park. For the present, of course, park headquarters operations must continue from the location in Yosemite Valley. However, there should be a prohibition on any new construction in the valley. New construction should be limited to the park periphery, perhaps in the administrative site at El Portal. Relocation of existing housing and construction of new housing facilities outside the park—or at least outside significant

scenic areas—will be contingent upon full implementation of the park transportation system.

Although NPCA did not recommend removal of many existing structures in Yosemite Valley, the Association comments expressed a strong belief that the total number of accommodations available in the valley should be reduced by decreasing the density of campsites and eliminating some of the tent cabins and some Curry Village housekeeping units.

In terms of activities, park interpretive activities could be expanded, but hang gliding, golf, skating, and certain other activities should be totally excluded from the national park because they result in use patterns incompatible with protection of park resources. Many current services provided within the park would better be located at staging areas.

JAMES M. CORAS

This photograph of a Jeffrey pine high atop Sentinel Dome in Yosemite National Park was made shortly after the moon set so that an exposure of four hours might be employed to reveal the apparent movement of the stars. The tracks of man-made satellites are also visible.

SST

Staggering Costs

NPCA was distressed at Secretary of Transportation William T. Coleman's announcement in February of his decision to allow the Concorde SST to land at two U.S. airports for a sixteen-month trial period. To stop any such landings and to force a review of the decision, NPCA immediately joined with the Environmental Defense Fund, members of the U.S. House and Senate, and other environmental groups in court action.

Earlier, debate over the adequacy of an environmental impact statement (EIS) prepared by the Federal Aviation Administration on the proposed landing of the Concorde at Dulles Airport in Virginia and at John F. Kennedy Airport in New York had prompted the Secretary to hold public hearings in Washington, D.C., in January.

Robert D. Thurston, an NPCA member and resident of the Dulles Airport area, has spent several years studying the effects of noise and other types of pollution caused by subsonic and supersonic aircraft. Mr. Thurston agreed to testify on behalf of NPCA and also represented other parts of the environmental movement as an expert on noise and ozone depletion.

Thurston showed that FAA greatly underestimated the effects noise will have on people both in terms of its effects on individuals and in the extent to which it is disruptive of large areas. Thurston said the noise impact of the Concorde would be sufficient in itself to deny the landing.

In addition he said, "The final EIS data regarding the ozone depletion effect of the SST is misleading; minimizes the total incidence increase; underestimates the worst case probability; inadequately presents the mortality [from] skin cancer; and completely disregards the medical and other costs to the public both nationally and in the world. The medical costs to people from predicted SST ozone depletion (skin changes, eye damage, skin cancer, resultant disfigurement, and death) will, in the long run, be staggering—in 30 years an estimated minimum of 2.5 billion dollars worldwide."

Members of NPCA who are disturbed by the impacts of SST flights can express their concern by participating in a nationwide boycott of British Airways and Air France, which are the two airlines trying to bring the Concorde into the United States. As soon as possible please send these airlines a note saying that you will take your foreign trips on other airlines as long as they insist on imposing the Concorde on the United States.

British Airways
245 Park Avenue
New York, New York 10017

Air France
1350 Avenue of the Americas
New York, New York 10019

MID-ATLANTIC OCS

Oil Spills off Assateague?

Concern about the impact of Outer Continental Shelf (OCS) development on the Atlantic shoreline led NPCA to participate in hearings held by the Bureau of Land Management in Atlantic City, New Jersey, to receive comments on a draft environmental impact statement (DEIS) prepared on the proposed oil and gas lease offshore the mid-Atlantic states. Ann Platt, a member of NPCA, presented testimony on behalf of the Association.

In her testimony, Platt outlined a number of areas in which the draft environmental impact statement was deficient or revealed a need for more study of possible impacts. The DEIS gives no real recognition to the value of federal lands such as Assateague Island National Seashore (Virginia and Maryland), Gateway National Recreation Area (New York), and Brigantine National Wildlife Refuge (New Jersey). The potential for contamination of these areas by oil spills is barely discussed.

International conventions, new

Coast Guard rules, and future design of foreign oil tankers are not taken into consideration when the statement concludes that the possibility of spills would be less from development of OCS oil and gas than from continuance of use of foreign supplies. Furthermore, little data exist to measure the impact of chronic low-level discharge from tankers and pipelines. NPCA recommended delay of OCS development until more is known about chronic low-level pollution and technology has been developed to control it. NPCA representative Platt expressed deep concern that plans were being made to carry out this type of operation even though very little is known about oil-spill trajectories or how to clean up oil spills along the Atlantic Coast. Heavy use of helicopters is barely mentioned in the DEIS even though the effect of noise on people and wildlife is known to be an environmental health hazard.

Platt expressed NPCA's desire to see more complete discussion of problems in the final environmental impact statement and a delay in development until definite assurances could be made that the possible major adverse impacts could not occur.

SHENANDOAH

Wilderness Wanted

NPCA recently testified on invitation before a Senate subcommittee on S 885, which would officially designate as wilderness 79,699 acres in six areas of Shenandoah National Park in Virginia. NPCA strongly supports the immediate designation of wilderness areas in Shenandoah but stated that the bill should cover approximately 33,000 other acres in the park that also qualify for protection as part of the National Wilderness Preservation System.

Classification as wilderness would protect a total of 112,687 acres of delightful Blue Ridge country—lush and varied forests, meadows, gorges, waterfalls, and abundant wildlife. NPCA pointed out at the hearings that wilderness protection is crucial because natural conditions in Shenandoah combined with the park's accessibility to urban areas have created pressure for expanding roadways and visitor facilities within the park.

Some local citizens have raised objections to designation of wilderness areas in Shenandoah, claiming that such designation would mean the closing of fire roads that could be essential in the event of a major disaster such as a forest fire. They have been concerned about areas such as the Old Rag Mountain area of the park. However, as NPCA pointed out, National Park Service management policy states that "An area will not be excluded from a wilderness recommendation solely because established or proposed management practices require the use of tools, equipment, or structures if those practices are necessary for the health and safety of wilderness travelers or protection of the wilderness area." Therefore, if NPS officials in Shenandoah feel that management roads and fire roads within the park

wilderness areas need to be maintained for ready access to backcountry areas, they can do so even though these areas have been designated wilderness.

Contrary to claims by local opponents, creation of the wilderness areas would not curtail tourist activity in Madison County, Virginia. In terms of visitor use, NPCA noted that virtually everything that is now allowed in these backcountry areas of the park would still be permissible in a designated wilderness. These activities include horseback riding, hiking, camping, wildlife observation, photography, and fishing. The recommended wilderness designations would have no effect on the use of Skyline Drive or transmountain roads U.S. 211 and U.S. 33. (Most visitors to Shenandoah enjoy the park from Skyline Drive.)

NPCA concluded that wilderness designation for Shenandoah park would have only beneficial results.

There was little opposition to S 885 at the February 5 hearing.

REDWOODS

Profits & Protection

NPCA continues to urge federal acquisition of managerial interests in the watershed areas adjacent to Redwood National Park. This Association maintains that a promising approach to protecting the California park would be acquisition of managerial rights from timber companies through what is legally termed a "declaration in taking."

This would enable the National Park Service (NPS) to require timber harvesting practices that would have minimal environmental impact on the park. Timber companies have been harvesting old growth redwood trees on their lands almost completely by clearcutting huge patches. Especially in the Redwood Creek area, this logging, along with associated roadbuilding, chokes streambeds in the adjacent park with sediment and debris, undercuts stream banks, and thus endangers—and kills—ancient redwoods in the park.

Despite a July 1975 court decision ordering the Department to take effective action to protect the park and a subsequent Interior Department request to timber companies for an eighteen-month moratorium on logging in certain areas of the Redwood Creek watershed, the logging continued unabated. The Interior Department says that it now has no authority to expend additional monies for land acquisition in the watershed or to execute cooperative agreements that will require compensation. In a December 15, 1975, progress report required by the court, Assistant Secretary of the Interior Nathaniel Reed said that new authorization and appropriations would be necessary before the Department could expend funds and that a draft environmental impact statement outlining a proposed course of action to protect the park should be available for public review by mid-February 1976.

NPCA has suggested to NPS Director Gary Everhardt that the govern-

ment seek congressional confirmation of its authority to promulgate and enforce reasonable timber harvesting regulations in the Redwood Creek watershed. The constitutional basis for such authority is that federal property is being damaged; regulation would not deprive the private land owners of their property.

On the contrary, NPCA believes that timber companies would probably profit, not lose, in the long run from ecological operations. The clearcutting they now employ yields high profits in the short run, but the redwood forests require a long recovery period and recovery may never occur.

In addition to the regulatory approach, the Park Service could offer Congress declaration in taking of managerial rights as an alternative that would cost nothing or would be much less expensive than acquisition of land.

In meetings and other communications with Everhardt and Reed, NPCA President A. W. Smith and staff have urged that NPS undertake a cost accounting analysis comparing the present type of harvesting methods with methods involving selecting individual trees, small amounts of group selection, and a minor amount of small patch clearcutting—not more than 12 acres in a limited number of locations. Such a study would start with a presupposition of 10,000 acres of moderately valuable and typical old growth redwoods and cover an 80-year rotation period.

Mr. Reed has informed NPCA that the Park Service recently began a joint study with the U.S. Forest Service along the lines that NPCA suggested, but instead using various forest practices that the Park Service recommended to the California State Board of Forestry in November 1975. Those NPS recommendations are subject to the application of a general condition that no timber harvesting be allowed in any tributary watershed in which more than 30 percent of the area has been harvested in the previous ten years.

The detailed NPS recommendations to the California agency do not offer nearly as much protection to Redwood National Park as NPCA considers necessary, but the Park Service has spoken out about the serious damage to Redwood National Park and has urged the state to invoke tougher regulations for lands adjacent to the park.

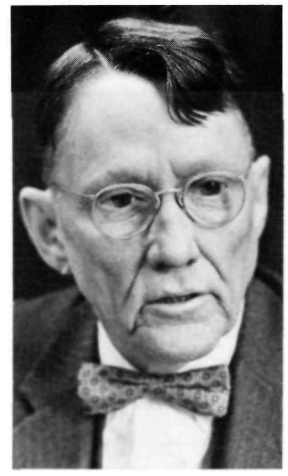
OVERVIEW OF PARKS

Problems & Progress in '76

"Unfortunately, in recent years, despite the devotion of the National Park Service's professional staff, the National Park System has suffered tremendously from the callous neglect of an administration indifferent to the needs of . . . treasured resources and to the will of the people as expressed by the Congress," NPCA recently told a congressional appropriations subcommittee at a January 1976 hearing.

As a prelude to hearings on the Fiscal Year 1977 Interior Department budget, Rep. Sidney Yates, chairman of the Subcommittee on the Interior of the House Committee on Appropriations, invited conservationists to present to the subcommittee their views on problems confronting the various agencies under the Department, especially as the result of budgetary con-

Memo to Members



Dear Friend:

As a greatly valued member of NPCA, you have been keeping closely in touch, I feel sure, with the work we are doing.

You know about our efforts to get the personnel ceilings lifted which have been imposed on the National Park Service by the Office of Management and Budget. Restrictions on personnel and funds have placed the parks in great jeopardy.

You know about the menace of mining in the national parks and what we are trying to do about it.

And you are acquainted also with the issue of air pollution over the parks from badly planned coal-burning power plants in the West.

The NPCA can help to safeguard our parks and natural resources effectively because it is an independent, nonprofit, public-interest association financed almost entirely by the dues, contributions, and bequests of its members.

We are not dependent on government agencies or commercial corporations, nor indeed to any great extent on foundations. And we are not an endowed institution.

This means that we have to make a big effort all the time to get new members in order to maintain our income and independence.

The primary way open to nonprofit organizations for this purpose is to mail to large numbers of people every year inviting them to become members. On the average, people maintain such memberships for a limited time, so we must enroll others to maintain membership levels and income.

All of this is successful for the most part, but it simply costs too much. We have to spend too much of our income to maintain the membership rolls from which the dues and generous contributions are received.

Further, in recent years, the problem has become more serious because many new private organizations have entered the conservation field. A number of new magazines have also been inaugurated. This helps the environmental cause, but fund-raising becomes more difficult for everyone.

I have discussed these problems with our competent business staff and advisors. And we all agree that we must at least attempt to change our fundamental approach to membership maintenance.

We want to focus our efforts on getting help from our membership through the magazine itself, which does after all reach all our members every month. We want to enlist our members individually in the vital work of providing the financial support on which we must survive and maintain our independence.

We think that some of the money spent on mailing promotional materials to the public can be saved and spent on our vital conservation programs and on the magazine—IF our members will pitch in and help. Further, we can even afford to offer a gift (and still save money) to those of you who volunteer in this effort. I am not here asking you for an additional contribution. Rather, I am asking that you enlist a new member in NPCA.

To show our appreciation for these valuable new memberships, NPCA is offering an exciting premium for each new member you enlist. From the most beautiful covers of our magazine we are putting together a portfolio of eight magnificent park scenes—four of which are in full color. Each print measures approximately 11½ × 13½ including a white border. All are suitable for framing or for coffee table display. Naturally the printing that appears on the magazine covers will be deleted from the portfolio series.

The portfolio cover itself is the magnificent Aniakchak Caldera photographed by M. Woodbridge Williams that appeared as a wraparound cover on the June 1975 issue. You may recall that the photographer and the pilot waited two years for a day clear enough to take this dramatic panoramic photograph.

The covers from *National Parks & Conservation Magazine: The Environmental Journal* contain some of the finest nature photography in the world. You will be proud to display this growing collection.

And yes, I did say *growing.* Because for each subsequent new member you send us we will add three new prints (one color and two black and white) to your portfolio from 1976 covers as they are available. Here is how it works.

In this issue of the magazine you will find an envelope for your use in getting one new member for NPCA this month. You can do this in two ways.

You can give a gift membership in NPCA by using the envelope provided in this issue. The recipient of your gift receives a gift announcement, membership card, NPCA decal, and, of course, monthly issues of the magazine for one year. And to show our appreciation, we will send *you* the NPCA portfolio as a gift.

The other way to enlist a new member in NPCA is to show the magazine to a friend, relative, or associate and tell him or her why you think NPCA is a good organization to belong to. If your friend joins at *any* dues category other than Student, *both of you* receive the portfolio as an expression of our appreciation. In this case, if you use the envelope enclosed in this issue, be sure to cross out the word "GIFT" both places where it appears and enter the new member's name in the first space and enter your name in the second space. This will ensure that both of you receive the premium.

This, then, is an appeal to you as an individual member of NPCA to help personally in enlarging the membership of this, *your* organization. We are depending on *you* for the help our cause so greatly needs. We will be grateful.

Sincerely,

Anthony Wayne Smith

siderations, as well as to give an overview of the management of those agencies.

NPCA referred the subcommittee to the startling deterioration of our National Park System as revealed in a recent survey conducted by this Association. Because of budgetary and personnel restrictions imposed on the Park Service by the President's Office of Management and Budget (OMB), the survey showed that in unit after unit of the National Park System, natural resources and virtually every aspect of park operations have suffered. (See page 13 and the February and March 1976 issues for more information.)

Although this Association was heartened that the FY 1976 Interior Department Appropriations Act specified that 533 new permanent NPS positions were to be filled, unfortunately OMB instructed the Park Service that it could fill only 400 of these positions. NPCA commented that "Such action would seem to fly in the face of a specific congressional mandate and should undoubtedly be challenged by the Congress."

In related matters, NPCA pointed out that the Park Service could face a significant problem during the summer of 1976—at the height of the national Bicentennial celebration—as the result of the unique fiscal transition quarter for July, August, and September 1976 that has been necessitated by the new Congressional Budget Act's alteration of the fiscal year. Some months ago OMB told all federal agencies that they should expect to have one-fourth of their annual budget for expenditures during the transition quarter.

However, unlike the majority of federal agencies, the NPS cannot spread its budget evenly throughout the year. Many units of the National Park System regularly budget as much as 50 percent of their annual allocations for use during the peak visitation months in the summer. NPS appealed to OMB and apparently was told that some units could spend one-third of their annual budget during the transition quarter, but should make up any remaining difference by cutting back on the previous quarter's expenditures. Many park system areas will lack funds sufficient to meet even the previous year's expenditures—at a time when park visitation is expected to reach an all-time high and when the American people will be expecting to find their parks in top condition for the Bicentennial.

For instance, the administration of **Glacier National Park** in Montana may be forced to hire less than half their normal contingent of summer seasonal employees (affecting enforcement and interpretation) and might have to close some entrance stations, campgrounds, and backcountry areas.

NPCA pointed out how several areas in the Park System such as **Big Thicket National Preserve** in Texas have suffered from lack of sufficient numbers of acquisition personnel and the unwillingness of the administration to request funds for the purchase of lands that Congress has designated for inclusion in the system.

With regard to operation and management of the Park System, NPCA called a number of park plans and proposals to the attention of the subcommittee.

Several NPS recreational areas, NPCA pointed out, are currently threatened by the Park Service's is-

suance of special use permits for projects that would have significant adverse impacts, and NPS did not prepare environmental impact statements on these projects and gave little or no opportunity for public reviews.

At **Glen Canyon National Recreation Area,** the Park Service issued a special use permit for a waterline from inside the NPS unit to a mine site outside, cutting across an area being studied for wilderness designation, without public notice or environmental impact statements. Similarly, at **Lake Mead National Recreation Area,** NPS personnel granted special use permits to the Exxon Corporation for uranium leases on lands being studied both for wilderness designation and for possible inclusion in Grand Canyon National Park. (Following a protest by NPCA and others that an environmental impact statement should have been prepared on each of these projects, the Park Service issued a directive to its regional directors and superintendents withdrawing their authority for granting such permits through wilderness study areas and investing that authority in the NPS director only. The directive is not retroactive to cover the permits at Glen Canyon and Lake Mead, so conservationists are continuing efforts to have these adverse projects halted. NPS is reportedly considering a recommendation to cancel at least one special use permit at Lake Mead.)

Without sufficient numbers of personnel in concessions management, the Park Service has experienced difficulty in the complex task of regulating the concessions in the large parks. These concessions are controlled by huge private conglomerates. Nevertheless, NPCA said, the Park Service has been slow in developing new concession regulations and a long-promised concessions handbook.

Among a number of other problem areas NPCA brought to the attention of the subcommittee was **Manassas National Battlefield Park** in Virginia. A tract adjacent to the park is threatened by proposed development of a so-called Great America Theme Park by the Marriott Corporation. Completion of the development would greatly increase crowding, traffic congestion, and pollution at this historic park. However, administration policy has constrained the National Park Service from speaking out against the project.

In other areas of the Park System, NPCA noted, the NPS is acting resolutely for the protection and preservation of invaluable areas. At **Assateague National Seashore** in Virginia and Maryland, the Park Service, recognizing the natural fragility of such a barrier island, has thrown its support behind legislation that would eliminate the possibility of a road down the length of the island and of 600 acres of commercial development.

At **Mammoth Cave National Park** in Kentucky the Park Service has begun to plan to relocate the Great Onyx Job Corps Camp to a new site outside the park. NPCA has been urging such action due to the incompatibility of this camp with the purpose of the national park. Extensive damage to cave formations and other vandalism have been traced directly to some Job Corps members.

The long-awaited NPS study on the proposed **Prairie National Park** in Kansas has been released. (See September 1975 issue.)

Among other NPS efforts that NPCA covered at the hearing were Park Service efforts to contend with local attempts to reopen **Voyageurs National Park** in Minnesota to hunting, snowmobiling, and timbering and to have large areas deleted from the park.

GLACIER

Conservation Begins at Home

Glacier National Park, along with other natural resources in northern Montana, is still threatened by proposed oil and gas leasing on U.S. forest lands adjacent to the park and by plans for a massive mining operation just eight miles across the U.S.–Canada border in British Columbia. The Cabin Creek Coal Mine would seriously pollute the North Fork of the Flathead River, which forms the western boundary of the national park. (See "Glacier: Beleaguered Park of 1975" in the November 1975 Magazine.)

NPCA recently urged Secretary of Agriculture Earl Butz and Secretary of the Interior Thomas Kleppe to postpone decisionmaking on Flathead National Forest oil and gas leasing applications until the Canadian mining situation has been resolved by U.S. and Canadian negotiators. The NPCA action was an attempt to ensure that the U.S. position in the talks is not weakened by actions within our own country that contradict our appeals to Canada for guarding the integrity of the North Fork environment.

The threat from within our borders involves applications for leases on 236,000 acres of Flathead National Forest lands filed by Texas Pacific Oil Company of Houston and Calgary, reportedly a wholly owned subsidiary of Seagram Distillery of Montreal.

In a draft environmental impact statement released in the summer of 1975, the U.S. Forest Service (USFS), an Agriculture Department agency, recommended granting leases on a total of 165,681 acres, most of which are in wilderness or roadless areas adjacent to Glacier park. NPCA and others protested. Now USFS is due to submit a final environmental impact statement to the Bureau of Land Management (BLM) of the Interior Department. In making the decision the BLM apparently will have the benefit of a study on the impacts of the proposed leasing that has involved planners from a number of government agencies.

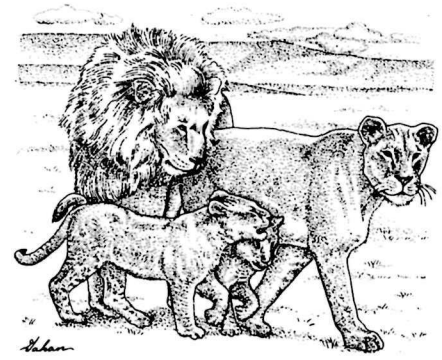


Illustration by Nancy Lou Gahan from Life in Desert and Plain *by Richard Perry, forthcoming from Taplinger Publishing Co.*

NPCA again stressed that there would be a number of adverse impacts from the proposed leasing. Developments associated with the leasing program could destroy or significantly disturb important habitat and use patterns of the grizzly bear (a threatened species under the Endangered Species Act) and many other animals. The Flathead River, portions of which are currently under congressional consideration for inclusion in the National Wild and Scenic Rivers System, could be polluted by oily runoff and sedi-

ment. Furthermore, the leasing would disturb new wilderness study areas, other inventoried roadless areas, and part of the Bob Marshall Wilderness.

The proposal by Rio Algom Ltd. to strip mine two mountains bordering Cabin Creek, a tributary of the North Fork, could result in pollution of the river by silt, sulphur, nitrates, arsenic, and phosphates. This pollution would have serious repercussions on wildlife and other resources of the area.

Bilateral negotiations on the Cabin Creek issue have reached a critical stage, and the problem may have to be referred to the International Joint Commission (IJC), an agency established under the Boundary Waters Treaty of 1909. This treaty governs pollution of waters crossing the U.S.–Canadian border. Negotiations must be conducted solely upon the basis of the nations' treaty obligations.

NPCA warned the U.S. department heads that making final recommendations and decisions on the U.S. oil and gas leasing prior to reaching a mutually acceptable decision on Cabin Creek would undermine the U.S. negotiating posture, a posture that asserts that pollution resulting from mine drainage in British Columbia would violate the treaty by polluting the pristine waters of the Flathead Valley. NPCA remarked, "The State Department would be hard-pressed in these negotiations to effectively argue against Cabin Creek's pollution if oil and gas exploration and development activities, with their potential pollution, were proceeding apace."

PADRE ISLAND

Oil Rigs Along the Beach?

NPCA recently protested any location of oil drilling platforms near the beach of Padre Island National Seashore off the Texas coast near Corpus Christi.

At the time of a public hearing held by the Bay Drilling Committee of the city of Corpus Christi, NPCA warned the city's petroleum superintendent that drilling operations would imperil this fragile barrier island and its fish, wildlife, and scenic vistas.

Padre Island is popular with swimmers and fishermen, and the area harbors more than 350 species of birds, a number of mammals, and marine life including loggerhead turtles. These turtles are currently under consideration for listing as a threatened species under the Endangered Species Act. The danger of oil spills should be weighed against those facts. NPCA told the committee that drilling operations should be placed more than three miles (at minimum) from the seashore.

An indication that oil companies may be planning more drilling platforms close to the shore of the NPS unit is that one oil drilling platform already has been placed 200 feet off the beach of Mustang Island immediately north of the national seashore. In any case, this Association said that recreation areas should not be sacrificed for oil, especially because the oil companies can drill farther out in the Gulf of Mexico.

At the public hearing, Padre Island National Seashore Superintendent John Turney stated that "the obvious presence of offshore oil and gas drill rigs on production platforms in otherwise natural and serene surroundings [would detract] from the experience most visitors seek when they visit the national seashore. Even though the visual impact varies greatly with an individual's personal values and sensitivity, it remains a deterrent to maximum enjoyment."

news notes

NEW HAMPSHIRE

Save the Old Man

"Men hang out their signs indicative of their respective trades: shoemakers hang out a gigantic shoe; jewelers, a monster watch; and the dentist hangs out a gold tooth; but up in the mountains of New Hampshire, God Almighty has hung out a sign to show that there He makes men." The famous Old Man of the Mountain rock formation that Daniel Webster so greatly admired and that has inspired countless other Americans is facing possible destruction at the hands of the New Hampshire Highway Department.

The department wants to expand the two-lane road that runs through Franconia Notch where the Old Man is located to make it a four-lane interstate highway. Many fear that the dynamiting and bulldozing tremors during construction might break the famous face from its foundations and disturb the natural area of Franconia Notch. Environmentalists, led by Lindsay Fowler, a recent graduate of

reader comment

More On Glacier Park and Children

In the January 1976 issue, a reader, Mrs. Elsie S. Matthews, wrote in criticism of "Triple Jeopardy at Glacier National Park." She notes, "we should take steps to help augment exploration and development of coal and gas, so that little children can be kept warm. . . ." I wonder if Mrs. Matthews realizes that the United States exports over 66 million tons of coal each year, primarily to Japan in order to stoke the Japanese steel industry fires. The Administration's "Project Independence" has continually made the point that the massive coal mining planned for the western states is all for the American public—to make the United States independent of foreign energy sources. Our export of both coal and oil (the latter in smaller quantities) belies that argument.

In addition, the funding under the energy bill for nonnuclear and environmentally compatible sources of energy such as solar and wind energy is woefully small. It would appear that the federal government is primarily committed to nuclear and coal to the benefit of a few major corporations and the detriment of the American public and of the nonrenewable resources of our national parks and [other] public lands.

Greta Nilsson
Media, Pennsylvania

The "little children" Mrs. Matthews . . . wants to keep warm by the reckless exploitation of coal and gas will find little to thank her for when they find themselves in a world from which health and beauty have vanished.

Gilbert Cryer
Evanston, Illinois

I have just (belatedly) discovered the articles about the [threats to] Glacier National Park in the fall issues of your

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Williams College, protested that the Highway Department and the Department of Transportation (DOT) were violating federal laws including the National Environmental Policy Act, which requires an environmental impact statement for all federally funded construction projects and a study of alternative routes. The project, which would receive 90 percent funding from DOT, has been temporarily halted by an order from U.S. District Court Judge Hughe Bownes.

The draft environmental impact statement ordered by Judge Bownes was scheduled to be released the latter part of February or early March for public comment. NPCA members wishing to help save the Old Man and halt the highway should write:

Hon. William T. Coleman
Secretary of Transportation
400 7th Street, S.W.
Washington, D.C. 20590
or
Save the Old Man, Inc.
Franconia, New Hampshire 03580

RESERVE MINING CO.

Still Dumping on Duluth

Every day thousands of people in Duluth, Minnesota, pick up half-gallons of filtered drinking water available at some grocery stores and public places. Although they live on the shores of Lake Superior, the world's greatest fresh-water body, in an area where Minnesotans once bragged about their crystal clear water, each half-gallon of unfiltered water from the city's taps now contains millions of asbestiform fibers. Such fibers are known to cause cancer in asbestos workers and others after inhalation and are suspected as carcinogens when ingested, so the demand for the bottled water is heavy. The Corps of Engineers had been footing the huge bill for the project until a recent court decision that the polluter will have to pay.

The source of the fibers in the city's water supply is upcurrent at Silver Bay, Minnesota, where the Reserve Mining Company iron ore processing complex each day dumps about 67,000 tons of taconite tailings into the lake. These fibers have been found throughout the lake in varying concentrations. (Only about 35 miles from Silver Bay is Apostle Islands National Lakeshore.)

Reserve is still dumping despite almost eight years of battles in and out of court in the most complicated environmental case in history, currently involving both litigation in the U.S. District Court in St. Paul and state hearings.

The new judge in the case is Edward J. Devitt, chief federal judge in the state, who assigned himself to the case after the U.S. Eighth Circuit Court of Appeals on January 6, 1976, ordered U.S. District Judge Miles W. Lord removed from the case. The appeals court said Lord had shown "gross bias" against Reserve Mining.

In April 1974 Judge Lord had shut down the Reserve plant, ruling that its discharges into the air and water substantially endanger public health. However, just two days later the appeals court gave Reserve a stay of injunction. Essentially leaving the burden of proof on the plaintiffs to prove that public health is most likely being harmed, the appeals court ruled that Reserve could remain open. (However, the discharges might be Reserve's Russian roulette—forced upon the public—especially considering that in general asbestos-related diseases do not show up until 20 to 40 years after time of exposure or initial exposure and that no safe threshold level for asbestos is known.) The court said that Reserve must take immediate reasonable steps to curb its air emissions, and that the company was entitled to an unspecified "reasonable time" for switching to on-land disposal of tailings, suggesting that the state and Reserve reach an agreement on a disposal site within a year.

The Minnesota Pollution Control Agency (PCA) reached an agreement in 1975 with Reserve on installation of air pollution control equipment, but the date was moved to 1977 to permit Reserve to experiment with technology.

Pointing out the urgency of the situation was new medical testimony heard by Judge Lord in November 1975. According to Dr. William Nicholson of New York's Mount Sinai School of Medicine, a recent study conducted by the National Institute for Occupational Safety and Health at a hard-rock mine in South Dakota found more than three times the number of respiratory cancer cases among long-term employees as could be expected. Fiber concentrations at the mine were one-twentieth the current occupational asbestos exposure standards. The fibers at this mine are identical to those emitted by Reserve. There are no direct data on the effects of ingestion.

Judge Lord then granted a motion made by the city of Duluth that Reserve pay for an interim water distribution project until a new filtration plant is completed and ordered the company to deposit an initial $100,000. Reserve had not been allowed to challenge the motion, and appealed the order. The widely esteemed Judge Lord was subsequently removed from the case. Nevertheless, on February 21 Judge Devitt ruled that Reserve *will* have to pay the Corps all past and future costs for the interim system. Concerning Reserve's contention that the company should not pay because public injury from the discharge is speculative, Devitt said, "It is not required by law or by common sense that illness and death are conditions precedent to taking preventive measures against such a health hazard."

The state of Minnesota is seeking fines totaling almost $41 million from Reserve for the company's violation of environmental laws. The PCA has not invoked its emergency powers to close the Reserve plant.

State hearings have considered five sites for on-land disposal of the taconite tailings. Reserve wants to use a site at Milepost 7, seven miles up the company's rail line from Silver Bay and only about three miles from the shoreline of Lake Superior. The Minnesota Department of Natural Resources testified that the "Midway" site at Milepost 20 at the terminus of the Cloquet River and the "Snowshoe" site in a peat bog about six miles east of the Babbitt mine would be most preferable.

However, the on-land solution to the

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magazine. [See NPCA at work p. 26.] I strongly support your continued opposition to any development plans along the Continental Divide in that (supposedly) protected corner of Montana. I had (mistakenly) assumed that any [area that included] (#1) an international peace park, (#2) 2 wilderness areas, (#3) 2 national forests, (#4) an indian reservation, and (#5) the popular Flathead Lake recreational spot would be pretty well protected. It's upsetting to find just how wrong I was!

Ellen Jones
Texas A&M University

problem of water pollution could pose a serious threat to health from airborne asbestos dust. Dr. Robert Zeller of EPA, head of a federal task force on the Reserve situation, says his group has advised that if on-land disposal is employed, it is crucial that adequate measures be developed for controlling the air pollution.

The Save Lake Superior Association, one of the plaintiffs in the court case, points out data showing that four of the five sites are unsuitable locations in terms of fugitive dust emissions. Alden Lind, SLA consultant, says that the Milepost 7 site, for instance, would expose Silver Bay residents to three times the fiber concentration that is coming to be considered the non-occupational asbestos exposure standard. The Snowshoe site would contribute two times the acceptable level to the Babbitt community. Air data related to the Milepost 20 site is not complete, but the citizens group maintains that it is the state's responsibility to show that the site is safe.

Following the state's decision on a site, Reserve might disagree with the selection and take the matter back to the courts. Meanwhile, it continues to dump its industrial wastes into Lake Superior with unknown effects on human health and the environment.

For more information, write Save Lake Superior Association, a group depending heavily on volunteer help to keep costs down, at 901 East 7th Street, Duluth, Minnesota 55805.

conservation docket

Eastern Wilderness: S 520—Senator Floyd K. Haskell (D-Colo.) chairman of the Environment and Land Resources Subcommittee of the Senate Interior Committee will hold hearings this month on the proposal to designate 42,100 acres of national forest land in the East as wilderness and to study another 138,000 for future designation.

Clean Air Act Amendments: A House-Senate conference will probably be held this month to eliminate differences in bills. A point of debate will be the "significant deterioration" section, which will decide air quality in national parks, monuments, historic sites, and wilderness areas.

Mining in the Parks: S 2371—To repeal laws permitting mining in units of the National Park System, place a four-year moratorium on new mining claims and activity within the system, and give the Secretary of Interior greater power to regulate mineral development in the system. Passed the Senate by a vote of 70 to 16 on February 5, 1976, and at press time the House Interior Committee was expected to act on the bill.

200-Mile Fisheries: S 961 and HR 20—To extend the zone of U.S. jurisdiction over coastal fisheries from 12 to 200 miles. Would also set up a fisheries council to manage and conserve fisheries resources. Bills were passed by both houses of Congress. Approval of the conference report, which will iron out any differences between the two bills, is expected to be followed by presidential signature.

Blackbirds: PL 94-207—In an unusual move, both houses of Congress introduced and immediately passed HR 11510 in one day. Under normal procedures, the bill would have been referred to committee for study and hearings before being brought to a vote on the floor. The President signed the bill (which had been introduced by the full Tennessee and Kentucky delegations) into law on February 9, 1976. PL 94-207 suspends application of the National Environmental Policy Act and the Federal Environmental Pesticide Control Act with regard to starling and blackbird control activities conducted in Kentucky and Tennessee before April 15, 1976. Upon certification by the state governor that "blackbird roosts" constitute a significant hazard to human health, the Secretary of Interior can authorize use of chemicals for bird control.

Land and Water Conservation Fund: HR 2763—To amend the Land and Water Conservation Fund Act to increase the present annual authorization from $300 million to $800 million. At press time, the House Interior Committee had reported the bill out for consideration by the full House. If the bill passes in its present form, a conference committee must be ap-

pointed to iron out differences with a bill that passed the Senate last October. S 327 would increase the annual LWCF authorization to $900 million. The existing federal–state matching grant program would be changed from a 50-50 to a 30-70 ratio.

Wildlife Refuges: HR 5512—Concerning administration of the Kofa Game Range in Arizona, the Sheldon Antelope Range in Nevada, and the Russell Wildlife Range in Montana. The House passed a version providing for continued joint administration of the wildlife refuges by the U.S. Fish and Wildlife Service (FWS) and the Bureau of Land Management (BLM). The Senate amended HR 5512 to provide for sole management by the wildlife-oriented FWS. The House of Representatives accepted the Senate amendments and at press time President Ford was expected to sign the bill into law.

Santa Monica: S 1640—To create a Santa Monica Mountains and Seashore Urban Recreation Area in California. The area would be administered by a joint federal, state, and local effort. A planning commission of twelve people would be selected by the governor of California and executives of the local governments and will be officially appointed by the Secretary of Interior. Upon approval by the Secretary of a plan submitted by the commission, $50 million in grants would be made available to local and state government units for implementation of the plan. The bill passed the Senate on February 6, 1976. The House is considering a companion bill, HR 3201. Bills introduced by Senators Alan Cranston and John V. Tunney (D-Calif.), Rep. Alphonzo Bell (R-Calif.).

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it is at present with the Inter-Governmental Maritime Consultative Organization (IMCO), which has been largely dominated in the past by the maritime countries. A whole generation of tankers is building which lack critical safeguards.

We have urged in these pages in the past that plenary power be given to flag, port, and coastal states to regulate vessel-source pollution. Protection should be accorded to maritime interests by requiring that coastal and port state regulations be no less effective than the international standards and that they be nondiscriminatory, nonretaliatory, relevant, and reasonable.

The subject of land-based pollution is vital to environmentalists. The convention will probably call upon nations to take all possible measures to reduce the pollution of the seas from land-based sources. But how can the nations be called to account?

The establishment of economic zones wherein coastal nations would exercise exclusive authority over mineral deposits appears to be one certain outcome of the conference. They will extend to 200 miles and probably beyond that point to the edge of the continental shelf. They will comprise most of the relatively shallow areas of the oceans within which oil and gas occur. Rules will be established for the exploration and exploitation of these resources and for the protection of the marine environment from pollution. As contrasted with demands for the extension of territorial seas, with full sovereign rights out to the 200-mile limit, the economic zone concept affords a valuable compromise.

WE IN THE NPCA have been deeply concerned about the oceanic fisheries and the marine mammals. But the field of vision of too many conservationists has been unduly narrow in all this work; and the fisheries, appallingly, have been largely overlooked.

Here again, the trend has been toward unbridled nationalism. The argument can be advanced, of course—as indeed it has been—that the oceans present the tragedy of the commons, where all may exploit and there is none to protect; whereas coastal state jurisdiction over fisheries could afford proprietary, hence a protective, interest.

But the tragedy of the commons occurs only where there is no common authority to regulate the use of the resource. Abundant experience has shown that the private owner is not necessarily a conservator. Conservation regulations must be established and enforced, whether the resource is managed by a coastal nation or by the world community.

WE WORKED through several years of the negotiations for a population test rather than a yield test for conservation purposes for the fisheries, and to incorporate safeguards for species associated with and dependent upon the harvested species. Unfortunately, the language incorporated in the agreed negotiating text was hedged about with so many provisos that administration and enforcement may prove well-nigh impossible.

This defect could possibly be remedied by judicial review and interpretation. Thus far, however, the texts provide only for dispute settlement machinery; and, unfortunately, disputes will not arise in many instances because the coastal, fishing, and market countries will agree on overexploitation. The bare beginnings of machinery for the initiation of enforcement proceedings by natural or juridical persons has been embodied in proposals for the dispute-settlement sections; the effort should not be dropped.

The protection of marine mammals has been left to the International Whaling Commission. The IWC has not yet proved its willingness and ability to protect the resource with which it is charged. The forthcoming convention must not weaken the powers of the IWC, such as they are, nor the self-protective authority of market countries like the United States in these matters.

THE PASSAGE of the 200-mile fishing bill by the United States has weakened its bargaining position in the entire conference, not only with respect to its own distant-water fisheries, but in respect to such grave national defense matters as passage through straits, not to speak of solutions for the deep sea mining problem.

Substitution of a reign of law in place of men depends on the emergence of an able and impartial judiciary. The drafts under consideration look in that direction; and if good will prevails, we may at least see the beginnings of a judicial order.

—Anthony Wayne Smith

A. W. Smith, president and general counsel of National Parks & Conservation Association, serves as an individual as a member of the U.S. Delegation to the UN Conference on the Law of the Sea. The views expressed here are those of the National Parks & Conservation Association.

NPCA's Park Resource Survey revealed such shocking evidence of deterioration throughout the National Park System because of OMB-imposed personnel ceilings and budget cuts that Congress called oversight hearings to ascertain the full impact caused by these restrictions.

Research such as this survey requires the continuing generous support of our members. Only through your contributions can we continue our work. Please send your tax deductible contribution today . . . and help save your parks.

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