

National Parks & Conservation Magazine

The Environmental Journal

August 1976



NPCA • National Parks & Conservation Association • NPCA

THE BREATH OF LIFE

WE WERE LEAFING through some of our issues of several years ago and found articles on air pollution in the summer of 1970. There were pictures of smog in Birmingham, and the story of the steelworkers demanding pollution controls. There were dim vistas of Washington, visibility poor at a quarter of a mile.

Since those primitive days we have had the Clean Air Act, the Council on Environmental Quality, the Environmental Protection Agency, and the Nuclear Regulatory Commission. You can still fight your way through the poison gases in our central cities, but you had best hold your hand over your nose and mouth. When you are caught in the inevitable and continuous traffic jams, you may wish to forget, if you can, that you are breathing enough carbon monoxide to destroy a considerable number of brain cells, which after all are useful. And the repeated air alerts continue, forcing us indoors, sending us to hospitals, marking the increased incidence of emphysema and lung cancer.

All of this might have been well under control by now had not a general administrative and legislative retreat begun very soon after the laws and institutions we needed to stem the menace were created.

What happened to us? What can be done about it? How long shall we endure the abomination of air pollution?

THE MEN who work in the executive offices and board rooms of our great corporations are powerful men. They can make choices which are unavailable to the Chief Executive or Congress. The management of the huge automobile companies could have decided to switch from the internal combustion engine to nonpolluting equipment; or short of that, they could have installed antipollution devices which would really have worked.

The changeover might have been costly in terms of reinvestment; but every schoolboy knows by now that new capital investment brings new employment and eventual profits. Car prices might well have risen, as risen they have anyway, whether from gouging or necessity. But what price clean air?

Corporate management must come to think of

itself as having a fiduciary relationship to the nation; that is, a trust responsibility to exercise its great power, no doubt within the limits of profitability, for the public welfare.

WITHIN the executive offices and board rooms of the great labor unions also, there are difficult choices to be made. Here again there is trust responsibility, not only to the membership of the unions, but to the general public as well. The imposition of stricter emission control standards for automobiles might conceivably result in temporary shutdowns while retooling for a better product. But labor is powerful enough in the basic industries to demand and get the necessary transition benefits in its contracts with industry.

The farmers of America, despite their dwindling numbers, are still well organized. They wield immense power in Congress and the Department of Agriculture. The damage done by air pollution to agricultural crops, all the way from barley and alfalfa to grapes and to fruit trees and woodlots, is intolerable. The blue and brown haze of the big cities reaches out every summer across the fields and woods of the open countryside and lies there as a miasma to poison the lives of the people. Yet the farm organizations have been strangely silent while the environmentalists carried most of the fight against air pollution.

THE CONSUMER MOVEMENT has shown remarkable vitality during this period. It has learned the techniques of exposure, with startling revelations of dangerous model designs and faulty manufacture, and it has coupled revelation with highly successful raiding techniques; that is, the organization of small, often temporary, mainly volunteer groups of persons devoted to the cause. But it has not yet accoupled well with the environmental conservationists, nor effectively with labor, nor at all with agriculture; and its impact may have been dwindling.

And what of the conservationists, the environmentalists? Earth Day in 1970 brought a great surge of indignation against environmental abuses, not least against the poisoning of the breath of life. For this the younger generations were in large measure responsible, and the active organizations they formed at that time are in some cases still functioning well. But a multiplicity of splinter groups was created, and structural cooperation has been poor. Isolated partner-

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weathered american chestnut trunk
jack jeffers photograph

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COVERS Everglades wildlife, by Peter B. Kaplan
A lazily flapping roseate spoonbill, patiently wading waterfowl, slitherings in grass, splash of water, buzzing insects, sultry heat—these are the evocations of the subtropical wilderness of the Everglades. But now the national park's rich diversity is threatened by intensive agriculture. (See page 4.)

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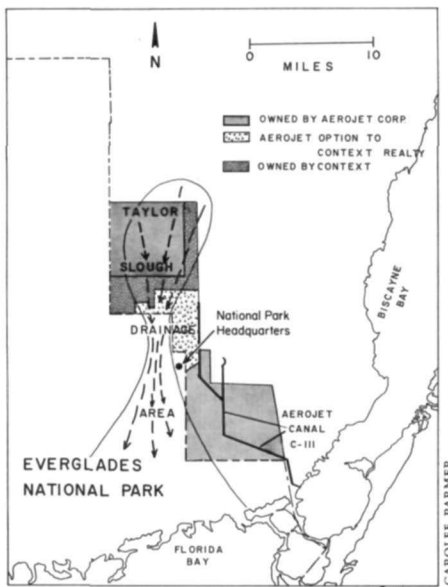
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Farming the Everglades

Intensive agriculture is threatening wetlands that drain into Everglades National Park

by MICHAEL F. TONER



SOUTH FLORIDA'S AGRIBUSINESS—once separated from Everglades National Park by a wide, wet plain of sawgrass—has finally reached the very doorstep of the park, and its arrival promises to touch off the next major skirmish in the fifty-year struggle over the creation and protection of the 1.4-million-acre subtropical park.

Miami's expanding suburbs are displacing the area's traditional agricultural lands, and the farmers who once worked the soil on the urban fringes are now moving west into one of the park's major watersheds. The move threatens to transform the virgin wetlands that drain directly into Taylor Slough into a checkerboard of tomato

fields and citrus groves, complete with altered drainage patterns, irrigation, and regular applications of pesticides and fertilizers. Already, isolated fields have been opened up within inches of the park's eastern boundary.

Two of South Florida's largest landholders—Context Realty Company and Aerojet-General Corporation—have quietly disclosed plans to strip the sawgrass and native trees from more than thirty thousand acres of land they own east of the park so that it can be plowed and sold or leased to farmers. Context has already built a twelve-mile farm road into the previously roadless area. The road cuts a clean, white swath directly

Taylor Slough is the easternmost of Everglades National Park's three major watersheds—and now the most vulnerable.



PHOTOGRAPHS BY CAROLLEE PARMER

across the Taylor Slough watershed.

But the road concerns park officials less than the development that it promises to bring to the edge of the Everglades. "If that land is plowed up and farmed, it is going to seriously disrupt the natural sheet flow of water into that portion of the park," says Frank Nix, the park's veteran hydrologist. "It may even completely eliminate it."

THIS IS NOT the first time that the park has been threatened by development outside its boundaries. On December 6, 1947, when seven thousand people gathered at Everglades, Florida, to watch President Harry S Truman dedicate the park, its creation looked like the end of the hard-fought nineteen-year battle to preserve a piece of the Everglades. In reality, the dedication marked only the beginning of the battle.

Originally, the park's boundaries had been proposed to encompass two million acres; but to make the project both politically and financially acceptable, the boundaries were redrawn several times. The end result was a smaller park. And although water was the lifeblood of

the subtropical wilderness, portions of each of the park's three major watersheds—the Shark River Slough, the Big Cypress Swamp, and Taylor Slough—were left outside the boundaries. These watersheds have been threatened ever since.

The Central and Southern Florida Flood Control Project threatened to divert the historic flow of fresh water through the Shark River Slough, and it took an act of Congress in 1968 to guarantee the delivery of minimum amounts of water to the park.

The Dade County Port Authority's Everglades jetport threatened to attract heavy industrial development to the area north of the park. It took heavy pressure by conservationists on the Nixon Administration to force the county to abandon its plans to expand an existing \$13 million training airport.

Piecemeal development threatened the Big Cypress Swamp, and it took both the U.S. Congress and the Florida legislature to authorize \$154 million in 1974 for the purchase of more than half a million acres of that watershed.

Taylor Slough, however, has gone largely unprotected. The slough itself is a modest water-

course—no more than forty miles long and seldom more than a few feet deep—but it is vastly important to the eastern reaches of Everglades National Park.

The land in the upper Taylor Slough basin earmarked for agricultural development is used during the wet season as a feeding ground by the wading birds that nest in the park. In the dry months of Florida's spring, the dun-colored sea of sawgrass in the area is dotted with wildflowers and grass-pink orchids, but even in the driest months the slough itself is an oasis of green. In the pools of the deepest parts of the slough, fish, birds, alligators, and other creatures gather to take refuge and wait for the summer rains. And because the animals congregate there, so do the people.

The boardwalks out over Taylor Slough at Anhinga Trail are the most popular attraction in the park. Nearly half of the one million people who visit the park each year stop there for their closest—and sometimes their only—look at Everglades wildlife.

Downstream from Anhinga Trail the slough spreads out over a broad, flat expanse of the 'glades, then finally mingles among the man-

Agriculture moving into the upper Taylor Slough watershed threatens to alter drainage patterns into Everglades Park.



groves with the salt water of Florida Bay. Park biologists estimate that the entire area supports more than 90 percent of the American crocodiles and endangered Cape Sable sparrows known to survive in the United States; more than half the nesting reddish egrets and roseate spoonbills in Florida; about half the park's wood storks; and significant nesting populations of endangered brown pelicans, great white herons, endangered Southern bald eagles, and ospreys. Even some of the commercial and sport fish species of Upper Florida Bay depend on the reduced salinity provided in part by the gentle flow of water from the Taylor Slough system.

BUT FOR ALL its importance to the Everglades, one crucial part of Taylor Slough—its upper watershed—lies outside the park boundaries. There, on land so flat that even the furrows of a field may alter the flow of water, Context and Aerojet plan to establish South Florida's newest frost-free farmlands. Past diversions of water have already made the area much drier than its original condition. Park officials estimate that the flow of water into the slough, even in the watershed's current undeveloped state, is only about half of what it used to be.

The park had been looking forward to some improvement. A new \$18.2 million conveyance canal system and pumping station just inside the main entrance—both authorized by the 1968 congressional guarantee of water—had been expected to help restore the water in Taylor Slough to historic levels. But if farming in the upper watershed interdicts the sheet flow of water, the overall effect could add up to one step forward and two steps back.

The pumping station would, in effect, merely replace the water the park now receives overland. But instead of receiving water cleansed and filtered by its slow seepage through the sawgrass marsh, the park would receive water increasingly laden with nutrients and pesticides pumped from a canal that

The natural sheet flow of water is the lifeblood of the subtropical wilderness of the Everglades, where a myriad of plants and animals—many of which are endangered species—depends on the wild and natural ecosystem.



Adult and immature wood storks



Turtle



Limpkin



Brown pelicans (endangered)



Trout guarding nest



Green heron on nest



American egret

Whitetail deer



Southern bald eagle (endangered)



Spotted gar

American alligator (endangered)



passes through the surrounding agricultural area. Most of the land adjoining the park is so low that it will be dry enough to farm only during winter and spring, and park officials fear that each summer's rains will wash the previous season's agricultural chemicals down through Taylor Slough. To document the danger, the Park Service has initiated a \$100,000 study of the area to trace the path of the chemicals and to study their build-up in the water, vegetation, and wildlife of the park.

"These lands are essentially wetlands," says Superintendent Jack Stark. "There is no way I know of that agriculture can be compatible with Everglades National Park."

The companies have a different view. "This land is just another part of Dade County," says Armer White, president of Context and for the past forty years one of the area's most successful land speculators. "We think this land has a role to play in the future of Dade County, and for the immediate future we think that role should be agriculture."

However, White is convinced that in time those fields will also give way to urban development, just as existing farmlands are now yielding to the suburbs.

There are some special ironies to the park's present dilemma. At one time, for instance, some of the land the companies now want to clear was within the boundaries of the park. An entire township now owned by Aerojet was actually public property. But the park boundaries were redrawn in 1958 to take in some of the mangrove forests along the Gulf Coast; and in an exchange of land with the state, the tracts in Taylor Slough's upper watershed were turned over to the state. A few years later, the state sold the land to Aerojet—for use in the siting of a manufacturing plant for solid rocket propellant. In 1973 Aerojet, its hopes of a solid fuel industry dampened, sold twenty thousand acres to Context.

The Park Service may even have contributed unwittingly, at least in part, to the pressure to farm the land, most of which is six or seven miles from the other agricultural fields of Dade County. Until 1975

about four thousand acres of recently acquired land inside the park—an area known as "the hole in the doughnut"—was being farmed on Park Service leases. But because of the incompatibility of farming with the management of the park, the leases were terminated at mid-year. Although fallow fields existed in the area, a number of farmers who lost their leases inside the park vowed to open up new fields in the Taylor Slough watershed. Within a matter of months, some of them did.

WIDESPREAD AGRICULTURAL development in the watershed has not yet occurred. That eventuality has been at least temporarily blocked by a dispute between Context and Dade County over zoning and tree removal permits. The trend, however, is unmistakable.

"The need for farmland is pressing," says Edward J. Campbell of the South Florida Tomato and Vegetable Growers, Inc. "As more and more land is eaten up by urbanization, the only way the farmers have to go is to the west, so it

Agricultural fields belonging to Aerojet-General Corporation and a perimeter canal border the eastern boundary of Everglades National Park. (Taylor Slough watershed is in the foreground.) Farther north, additional land is planned for agricultural development in the upper watershed of Taylor Slough. Even in its present undeveloped state, the flow of



looks like the conflict between the farmers and the park is going to continue."

Officially, park managers are counting on local authorities to resolve the conflict. Unofficially, they have their doubts about the county's ability to prevent substantial development of the Taylor Slough watershed. Both Context's road and the fields that now touch the eastern boundary of the park, for instance, were installed during a locally imposed zoning moratorium. And although the county now has a master plan that designates the area adjacent to the park as "environmentally sensitive," county officials are seriously considering changes in the plan that could allow from 20 to 30 percent of the land to be used for agriculture or residential development.

One early test of the plan has already been decided in favor of a group of South American investors who plan to build a 2,000-unit housing complex along South Biscayne Bay, an area the county had designated for preservation. A state court ordered the county to approve the zoning for the develop-

ment—or pay the developers for denying them the use of their property.

Both local and state decision-makers generally subscribe to the philosophy that the government cannot actually deny a person the use of his land without acquiring the land.

"You could probably make as good a case for buying Taylor Slough as was made for the Big Cypress Swamp," says Nix. "This is the area where the park is now the most vulnerable."

That, however, is a task that the Park Service would prefer to leave to the state. "Particularly with the purchase of the Big Cypress under way, we feel that the federal domain in South Florida is large enough," says Superintendent Stark. "The federal government is interested in taking all possible steps to avoid acquisition."

Park officials have supported a proposal for state purchase of the watershed, but the reluctance to commit federal funds has been matched by the state's similar reluctance. So far, the proposal to acquire thirty-three thousand acres

of the watershed has languished for more than a year with the Florida Department of Natural Resources (DNR), which administers a 1972 program to buy \$240 million worth of environmentally endangered lands.

The cost of the Taylor Slough purchase is estimated at more than \$30 million. Although DNR officials say the area is highly regarded for its environmental value, it must compete with other planned state purchases—beaches, springs, woodlands, and wetlands—for the \$100 million that remain in the program. Taylor Slough, in fact, has been assigned such low priority that the fund is likely to be exhausted before the first acre of the watershed can be purchased. If that happens and no new solution to the problem is forthcoming, the last of the park's major watersheds to be threatened could be the first to be developed. ■

Michael F. Toner is the environment writer for *The Miami Herald*. For the past five years he has been writing about South Florida's environmental problems.

water into the slough is only half what it used to be before past diversions of water were made. Not only will agricultural development divert water badly needed in the Everglades ecosystem and upper Florida Bay, but the water received will be laden with nutrients and pesticides—serious threats to wildlife and other ecosystem components of the Everglades.



To the Farthest Port . . .

During the Federal Period the newly established United States developed her resources at home and her commerce overseas

When peace arrived and our independence was acknowledged, the merchants of Salem were among the first to explore new channels of trade, disdaining to confine themselves to the narrow track of a colonial commerce.
—Captain Reynolds of the ship *Potomac*, 1835

THE EARLY YEARS of independence were turbulent and challenging for the new American states. For although they had rid themselves of the restrictions that had chafed them, they had lost the structure, protection, and privileges they had enjoyed as part of Britain's colonial empire. It remained to be seen whether the leaders of the successful revolution could forge a coherent nation from thirteen disparate and rivalrous former colonies.

The Federal Period, from independence in 1783 to the beginning of the Jacksonian era in 1828, was one both of consolidation and of growth and change as the problems confronting the new nation were resolved. During this time, the loose confederation of autonomous colonies that had fought for independence was welded into an enduring federal Union—the United States of America—and a framework—the Constitution—was constructed to ensure this Union's continuing stability and orderly growth.

The total size of the United States was more than doubled by the Louisiana Purchase of 1803, and by 1830 28 percent of Americans lived west of the Appalachians; therefore means had to be devised to incorporate these rap-

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.

idly growing western territories into the Union's political and economic life. During this period, this vast area was explored and surveyed, procedures were laid down for the formation and admission of new states to the Union, and the lands beyond the mountains were integrated into the economic life of the nation by a growing network of roads and canals.

These were years of dynamic growth in industry, agriculture, and domestic and foreign commerce as well. American industry expanded to meet the demand for manufactured goods once supplied by Britain. American farms and forests began to produce raw materials and foodstuffs to satisfy not only a domestic market but a world market. America's merchant ships, successfully challenging European monopolies, established commercial ties with India and the Orient and opened up avenues of trade around the world to replace the European and West Indian markets closed to them since independence.

The annals of their daring ventures "to the farthest port of the rich East" are among the most romantic and colorful of the Federal Period.

ON DECEMBER 3, 1785, the square-rigged ship *Grand Turk* set sail from Derby Wharf in Salem, Massachusetts, under orders for the Isle of France in the Indian Ocean—one of the first American ships to voyage beyond the Cape of Good Hope. Newly

refitted following heroic service as a privateer during the American Revolution, she was loaded with a cargo calculated to appeal to an isolated outpost: beef and butter from New England farms; rice and tobacco from the southern states; pig iron from Pennsylvania; and sugar and rum from the West Indies. Her owner, Elias Hasket Derby, had given the captain, Ebenezer West, and the supercargo, William Vans, instructions to dispose of her cargo as advantageously as possible and to buy whatever marketable commodities Isle of France might offer.

The *Grand Turk* and her owner were embarked on a venturesome enterprise—to secure a share of the lucrative trade with India, China, and the Pacific islands hitherto dominated by Britain, France, and Holland. Each of these powerful nations had well-established routes to "the Indies," and Elias Derby was gambling on selling his cargo at one of the way stations at which they stopped en route to refill their water casks and take on fresh food. (Traditionally, France called at Isle of France, Holland at the Cape of Good Hope, and Britain at St. Helena for this purpose.) In return for his prosaic casks of beef, butter, and rum, he was hoping for a return cargo of teas, silks, and spices that would fetch him a handsome profit on an American market long deprived of such luxuries.

For generations before the daring voyage of the *Grand Turk*, Salem's men and boys had sought

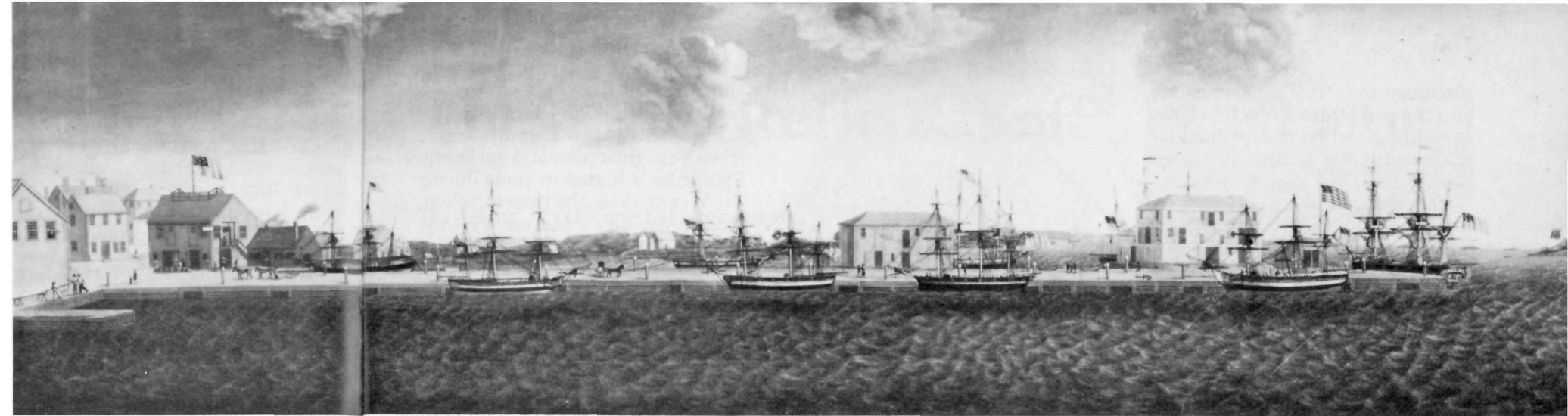
their fortunes from the sea—first fishing for cod off the Grand Banks, then trading codfish and lumber to Britain's West Indian colonies for sugar and molasses. The only major American port never occupied by the British during the Revolutionary War, Salem in 1785 was the sixth largest city in the newly independent American states. Her wartime fleet of 158 privateers had rapidly been converted for trade, and her captians and merchants were eager to resume the maritime commerce upon which her prewar prosperity had been based.

IN CHALLENGING the established trade monopolies of the great European powers in the East, Elias Derby and his fellow

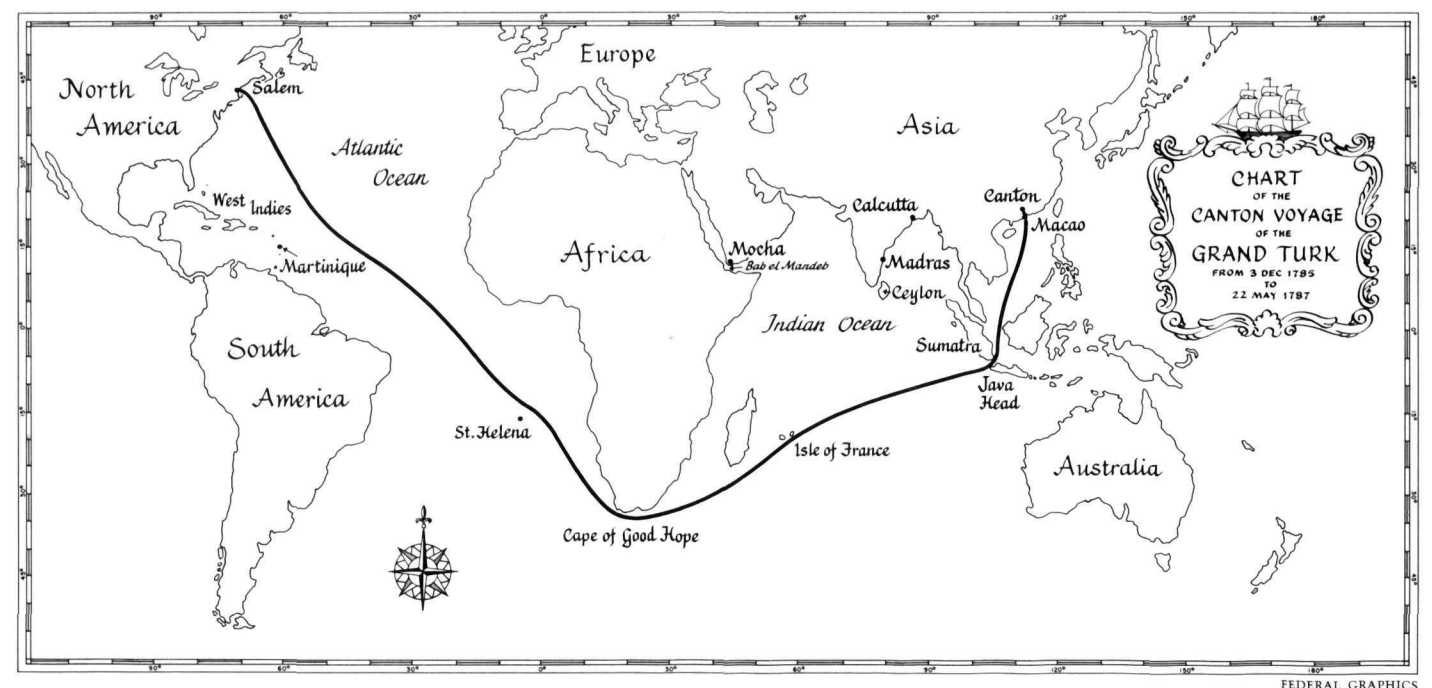
shipowners had to rely as heavily on the shrewdness, judgment, and enterprise of their captains as upon their seamanship. For at the remote outposts of the world decisions that could ensure a successful voyage rested entirely in their hands. They had to judge when to sell a cargo and what to buy for the home market; when to sail on to an unknown port and when to head for home; when to gamble and when to be cautious. As captains, they received from 1 to 8 percent of the net profits of a voyage, in addition to salary and whatever they could realize on the up to five tons of trade goods they were allowed to carry on their own account. It was therefore very much in their interest to realize a profit on the voyage, and most did.

Typical of Yankee enterprise was Captain Jonathan Carnes who, discovering by chance that pepper grew wild on the north coast of Sumatra and could be purchased directly from the native inhabitants, realized a 700 percent profit on his first cargo of the precious spice and founded the trade that for a time made Salem the pepper center of the world.

WHEN Captain Ebenezer West of the *Grand Turk* arrived at Isle of France in April 1786, he found commerce at the outpost at a standstill because of Britain's recent conquest of France's Indian colony at Pondicherry. West sold his cargo of foodstuffs and, rather than return home emptyhanded, leased the *Grand Turk* to a French



Crowninshield's Wharf, Salem, Massachusetts, at the height of Salem's prosperity. Courtesy of Peabody Museum, Salem.



merchant to carry a cargo of ebony, ginseng, gold thread, and betel nuts to Canton, where he planned to exchange it for a cargo of tea for Boston.

The Americans arrived at Canton's Whampoa anchorage on the Pearl River in September 1786 with everything still to learn about trade with China. In the four months they remained at Canton, the *Grand Turk's* officers and crew became familiar with a new and complex world. In contrast to the confusion and bustle of junks, sampans, ferryboats, houseboats, and foreign vessels that crowded the river, they found their days in port governed by an elaborate and rigidly enforced code of conduct.

Since the 1745 decree of the Emperor Yung Ching confining all of China's foreign commerce to the port of Canton, foreign ships had been required to transact their business through one of the thirteen "Hong" merchants who had paid the Emperor for this privilege. Upon arrival at Whampoa anchorage, each ship's master chose a Hong merchant to act as his agent in Canton. The Hong bought the ship's entire cargo, guaranteed the payment of all customs duties, procured and loaded the outward cargo, and assumed responsibility for the foreigners while they were in port.

It often took three or four months to assemble the customary outward cargo of tea, because tea crops were bought several hundred miles north of Canton, then had to be carried by foot and sampan to the city where they were sorted and packed for export.

During this long wait, West and Vans lived at a "factory"—rented quarters—at Canton, cut off from the life of the city by high walls. For amusement they exchanged courtesy calls and dinners with other captains then in port. At the time of the *Grand Turk's* visit, there were ships at Canton from Holland, Spain, Denmark, Sweden, and the British East India Company, as well as two American vessels from New York—the *Empress of China* and the *Hope*. (The first American consul to



Design from the punchbowl presented by the Hong to Captain West in 1786, now at the Peabody Museum, Salem.

China, Major Samuel Shaw, had just arrived aboard the *Hope*; West and Vans lodged with him during their stay.) The ship's crew stayed on board ship to repair, clean, and overhaul her for the long homeward voyage.

When at last the cargo had been loaded, formal leave was taken of the Hong, who presented them with a handsome punchbowl embellished with pictures of the *Grand Turk* under full sail. Captain West then applied for official clearance ensuring that the ship could leave Chinese waters without harassment by Chinese customs officials and, after dropping the river pilot at Macao, set sail across the China Sea for Salem, laden with tea, chinaware, and spices.

Although there is no exact accounting of Elias Hasket Derby's profit from the *Grand Turk's* 1786 voyage to Canton, he died America's first millionaire. The *Grand Turk* was sold at Isle of France in 1788, but three other Derby vessels bore that proud name after her. During the peak era of the China trade, New York and Philadelphia shipped to Canton hundreds of pounds of ginseng—a plant native to the mid-Atlantic states and highly prized by the Chinese for its purported medicinal and aphrodisiac properties. Boston merchants based their tea trade on sea otter skins from the Pacific Northwest, while Salem's

ships hunted the *bêche-de-mer*—a sea cucumber found in the South Pacific—en route to Canton, where it was in great demand for soup. Except for a hiatus in trade during the War of 1812, the men of Salem, true to the city's motto—"To the farthest port of the rich East"—continued to bring the treasures of the Orient, as well as of India, Ceylon, and Mocha, in Arabia, to her warehouses and prosperity to her merchants. Not until the advent of the clipper ship in the 1840s did Salem yield her place as a foremost center of trade to the deepwater ports of New York and Boston.

ALTHOUGH the last of Salem's sailing vessels left Derby Wharf in 1893, the wharf still remains. Together with Central Wharf, the Customs House, the Scale House, the Rum Shop, and two of Elias Hasket Derby's handsome residences, Derby Wharf forms Salem Maritime National Historical Site. Here the visitor can relive in imagination the glorious days of the China trade, when Salem's wharves were crowded with ships and her warehouses were fragrant with exotic teas and spices.

Those interested in the new nation's early industrial development may visit the restored iron works at Hopewell Village National Historical Site, Pennsylvania, while the Chesapeake and Ohio Canal National Historical Park between Washington, D.C., and Cumberland, Maryland, preserves one of the early canals linking East and West. The political history of the Federal Period comes to life at such sites as Federal Hall National Memorial, New York City, where George Washington was first inaugurated and Congress met from 1785 to 1790; Hamilton Grange National Memorial, New York City, built by Alexander Hamilton, first Secretary of the Treasury and author of the *Federalist Papers*; and Adams National Homesite, Quincy, Massachusetts, home of John Adams, Revolutionary leader who served as our second President during the Federal Period. ■

The Great Relic Ripoff

Bandits with metal detectors are "tearing pages from our nation's history books"

by ED MYERS

PARK RANGER William Blake of Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park in Virginia reached up and took a quick swipe at the sweat on his brow.

"You can see here where somebody digging illegally can really harm the trenches," he said flatly, pointing toward a large foot-deep hole in the ground. "They bring their detectors in here and tear the park apart. I doubt that any of them give a thought to the fact that they're destroying a vital part of our history."

Blake, who happened to be standing atop Lee's final battle trench at Spotsylvania Court House battlefield, was referring to the onslaught of relic hunters who enter national battlefield parks with sophisticated metal detectors in search of Civil War memorabilia. The "hobby" has reached stages of professionalism for many and is resulting in a quiet but costly battle between park officials and those who ignore posted warning signs and regulations. Although some fines have been levied against those caught in the act, rangers say too many are getting away. One of the biggest problems in overcoming illegal relic hunting is the lack of Park Service manpower. For instance,

only three permanent rangers and two seasonal rangers patrol 4,500 acres and thirty-eight miles of trenches in the four-park Fredericksburg battlefield system. And with fines of only \$25 to \$30 in most cases, a relic hunter with a valuable find can take in as much as \$500 to \$600 and write off the fine as a "business expense."

The majority of "detector bandits" do their work at night in closely wooded areas of a park. Often they post lookouts near main roads with two-way radios for instant warnings. Few, if any, of those caught claim they did not know about the laws prohibiting relic hunting in park areas.

"They're not digging a few bullets," said Fredericksburg Chief Ranger Charles Wyatt. "They're literally tearing the pages from our history books. The story is gone. You can go out to Spotsylvania battlefield now, and you can see it will take almost a complete restoration to get those trenches back in shape."

None of the rangers patrolling the four battlefield parks in the Fredericksburg-Spotsylvania area see the detector bandit as a passing fad. The prices of Civil War relics have doubled over the past ten years, and



Cannon at Chancellorsville Battlefield

Infantryman foot trail at Spotsylvania Court House Battlefield





PHOTOGRAPHS BY ED MYERS

Many historic battlefields are being seeded with metal discs the size of a quarter to foil robbers' metal detectors.

Rangers William Blake (left) and Bill Moore inspect a hole at Spotsylvania Battlefield where a relic hunter removed a Confederate cannon. Moore apprehended the robber.



there is every indication that the value of these relics will continue to climb. Although the Fredericksburg battlefield remains the least harmed, Spotsylvania, The Wilderness, and Chancellorsville have been hard hit. Relic hunters have unearthed complete cannons and carried them out of the trenches.

"It's become almost a game with them," said Wyatt. "Rangers have put in hours and hours of often uncompensated overtime to counter it, but it continues to grow."

Ranger Bill Moore agreed. "I've been threatened," he said. "I've been told that if I'm seen in the woods, I'm going to get a load of shot." Yet, referred to by his fellow rangers as the man who has caught the most, Moore continues to comb the battlefields for robbers.

According to rangers, forty-seven people were caught during the summer of 1975 in the Fredericksburg park system. At the Petersburg battlefield in Virginia officials caught and sent to court eleven people during 1974 and 1975. Most park officials say the increase of offenses in recent years can be directly linked to the increased availability of detectors that perform better than previously available models. Many detectors cost as much as \$1,000 and can scan metal objects buried as much as two feet underground. Usually, however, the detectors seized in an offense are worth around \$200.

THE PARK SERVICE is presently placing signs throughout national battlefield parks warning against relic hunting. Also, a free map given to all visitors at park entrances carries the same warning. In addition, in the Fredericksburg system, Ranger Blake has been placed in the forefront of a novel "seeding" program using local youth groups to plant metal discs about the size of a quarter in trenches to foil metal detectors.

"We've saturated some of the trenches," said Blake. "if somebody went into them with a detector, they would get a constant reading and perhaps become discouraged."

Blake argues against the theory that some people hold that digging up relics saves them for others to enjoy. "Most of the items of value are made of brass and lead, and that doesn't deteriorate so easily," said Blake. "They've been there for more than a hundred years already."

The would-be relic hunter would do well to talk with rangers and park officials. As Superintendent Dixon Freeland of Fredericksburg pointed out, "The battles and encampments didn't begin and end at what are now the park boundaries. Some of the best relics still exist on adjoining private land."

Just what effect tighter laws and more public education will have on the relic hunter is difficult to estimate. At present, Virginia seems to be the only state having trouble of this magnitude, perhaps because Virginia battlefields are so well known.

Today National Park Service officials are fighting another war over these trenches—and they intend to win. ■

Bringing Back THE ATLANTIC SALMON



Efforts are under way to restore the once-bountiful Atlantic salmon to rivers in the Northeast

by ROBERT E. LENNON

The return of one thousand Atlantic salmon to the Penobscot River and at least three salmon to the Connecticut River in 1975 is small but encouraging indications that this splendid game fish can be restored to New England rivers. The work of many people, organizations, and governmental agencies is apparent in the improvement of some rivers to the point where they can again support fishable populations of Atlantic salmon, American shad, and other valuable sea-run fishes.

Much remains to be done, however. The momentum achieved in renovating rivers and restoring salmon must be sustained to solve remaining old problems and emerging new problems.

The Department of the Interior and its Fish and Wildlife Service have expanded the Coastal Anadromous Fish program in New England, with emphasis on Atlantic salmon and American shad. We are participating in state-federal-international efforts to develop restoration plans and priorities, to construct fishways at dams, to conduct biological surveys of candidate rivers, to assess the effects of pollutants on salmon and other fish, to monitor the movements and migrations of salmon and shad by telemetry, to characterize Atlantic salmon stocks in North America, and to construct or reassign hatcheries to rear millions of Atlantic salmon smolts for release into restorable rivers. Although we are well aware that this effort is a very long shot, the effort must be made in the management of aquatic resources for the greatest public good.

Nathaniel P. Reed

Assistant Secretary for Fish and Wildlife and Parks
U.S. Department of the Interior



DRAWINGS BY BOB HINES, FWS

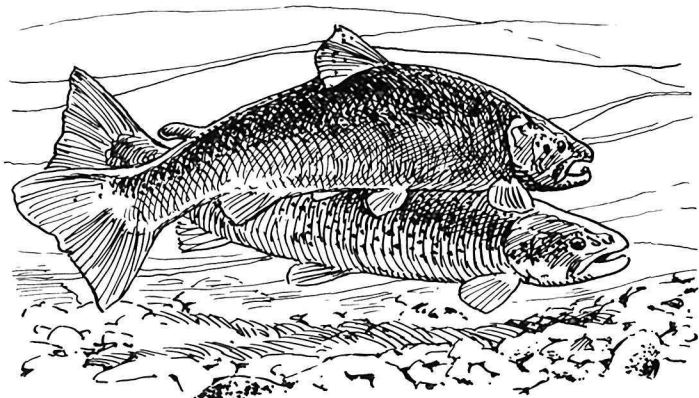
Female (foreground) and young male Atlantic salmon

THE AMERICAN DISASTER" is the title Anthony Netboy gave to the chapter on Atlantic salmon in the United States in his book *The Atlantic Salmon: A Vanishing Species?* (Houghton Mifflin Company, Boston, 1968). Disaster is the appropriate word for the destruction of the bountiful salmon that existed in New England rivers, Lake Champlain, and New York tributaries to Lake Ontario before the nineteenth century. This enormous and valuable food supply, returning each year from the sea, was sacrificed within a few decades by the erection of numerous dams and the transformation of rivers into open sewers. The complete destruction of the U.S. salmon resource was unprecedented, because many rivers in heavily populated and industrialized northern Europe continue to support token to good populations of Atlantic salmon.

Much has been written about the Atlantic salmon as the noblest of game fish and as a prized food fish. Large sums are spent by anglers each year to fish for salmon in leased or controlled rivers in Ireland, Scotland, Norway, Iceland, and Canada. Elsewhere, limited populations of salmon in Spain, France, Wales, England, Sweden, and the state of Maine afford some angling opportunity. What do we know of this animal that has prompted so much literature and is so eagerly—and expensively—sought by anglers and commercial fishermen?

THE ATLANTIC SALMON was pictured in carvings and paintings by cave dwellers in ancient Europe. It was esteemed by the Romans during the occupation of Gaul, and it has been valued as a sport and food fish ever since.

A salmon hatches in early spring from an egg in a



During spawning, the male Atlantic salmon casts milt as the female exudes eggs into the gravel nest she excavated.

nest excavated by the female parent in the gravel of a flowing stream. The small fish remains in gravel-bottomed nursery areas of the stream for one or more years—the average is two—and is called a parr. Upon reaching a length of six inches or more, the parr becomes silvery and ready to migrate to sea and is then known as a smolt.

The seaward migration of smolts from Maine rivers takes place in the spring, and the little fish move northerly along the coasts of Nova Scotia and Newfoundland to feeding grounds in the Davis Straits between Labrador and Greenland. On the average, they grow rapidly, and after two years at sea, they return to natal rivers as splendid eight- to twelve-pound fish. They enter the rivers in summer, often surmounting waterfalls and other obstacles, and move to the headwaters. They spawn in late October or November, and the eggs remain in the nests until early spring.

The parents may remain in the river through the winter and return to the sea in spring. Many perish, however, because they consume no food from the time they enter the river in summer to the time they reenter the sea nine or ten months later in emaciated condition. About 10 percent return to spawn a second time, and less than 1 percent spawn three times. Thus, for most salmon, the life span is four years—two years in the river and two in the sea.

TODAY THE QUESTION IS: Can the Atlantic salmon be restored in New England rivers? The answer is a qualified yes. The chance that salmon may be restored has prompted many dedicated Americans to bet their money and efforts in the endeavor. Their enthusiasm, focused through such action organizations as the International Atlantic Salmon Foundation, Restoration of Atlantic Salmon in America, Trout Unlimited, and others has inspired communities, industries, and state and federal agencies to join in a salmon restoration effort.

Experience with Atlantic salmon in Maine since 1948 has been encouraging. There, a cooperative effort by state and federal agencies, with help from sportsmen and industries, resulted in the saving and subsequent improvement of salmon populations in eight small rivers. Progress was slow in providing fishways,

abating pollution, and upgrading salmon culture in hatcheries, but the runs of salmon have increased and have stimulated further restoration efforts.

In 1966, the Maine Atlantic Sea Run Salmon Commission and the U.S. Fish and Wildlife Service designated the Penobscot River—once the most famous salmon river in Maine—as a Model River for Salmon Restoration. An immediate objective of the program is to produce a million salmon smolts a year in hatcheries, ready to migrate to sea, for stocking in the Penobscot. The stocking rate now is but a small fraction of the target million, but biologists counted one thousand returning adults at the famed Bangor Salmon Pool in 1975. Estimates of the economic value of restored salmon runs, in terms of sport fishing and other benefits, range from impressive to almost unbelievable.

Nine years ago, the Connecticut River Anadromous Fish Program was initiated by Connecticut, Massachusetts, New Hampshire, Vermont, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service. One of the program's objectives is to establish sustained runs of anadromous fishes in the Connecticut River Basin, with emphasis on American shad and Atlantic salmon.

Historically, the salmon ascended the Connecticut about 372 miles to the vicinity of Beecher Falls, Vermont, near the Canadian border. The present plans to establish annual runs of forty thousand salmon to much of that historic range are large and bold, to say the least. Through 1974, one-quarter million smolts were reared in hatcheries and released in the lower Connecticut tributaries. Fears that the little fish would not find their way through Long Island Sound, around Cape Cod, and to feeding grounds were dispelled when tags from fish captured at sea were returned from as far away as Newfoundland. The tags are button-sized plastic discs, bearing a legend and notice of reward, that are sewn to the backs of smolts before release in the river. Biologists now eagerly seek evidence of returning adults. A dead adult was found in the river in August 1974, and two dead adults and one live adult were taken in 1975. This admittedly tiny return to date is viewed as highly encouraging.

A Merrimack River Anadromous Fish Program was established more recently by Massachusetts, New Hampshire, National Marine Fisheries Service, and the

U.S. Fish and Wildlife Service. The restoration of Atlantic salmon and American shad is among the principal objectives. The first release of small salmon took place in 1975 in one of the Merrimack's headwater tributaries in the White Mountains.

In 1973 agencies in the United States and Canada initiated cooperative studies to determine the suitability of the international portion of the St. Croix River between Maine and New Brunswick for Atlantic salmon restoration. Indications are that restoration may be feasible within a few years.

Thus, ambitious programs are under way in New England to restore Atlantic salmon. It will be an uphill struggle all the way against some continuing and formidable problems.

POLITICS AND DOLLARS. A considerable number of state, interstate, federal, and international agencies and commissions have interests and jurisdictions on New England rivers. Many industries also have interests or rights. Among them, opinions vary widely on the best use of the rivers, and there is no unanimity that Atlantic salmon can or should be restored.

Money for salmon restoration is hard to come by, thereby posing a challenge to agencies to establish solid priorities among candidate rivers and to adhere to them. The experience in Sweden with Atlantic salmon and on the U.S. West Coast with Pacific salmon has shown that concentrated efforts and the stocking of large numbers of fish in each candidate river are necessary to rebuild worthwhile runs. Meager efforts or scattered stockings will not work.

INTEGRITY OF RIVERS. Consideration must be given to the fact that New England rivers have changed drastically since the days when they supported great numbers of salmon. Dams have stilled miles of fast water. Numerous lakelike impoundments may be inimicable to salmon. Thermal additions have changed temperature regimes. Channelization, highway and railway construction, logging, and log drives have altered river beds. Riverside dumping and filling have been commonplace for two centuries. And many communities in northern New England still discharge untreated wastes into rivers. Some species of fish that may be predacious on or competitive with salmon have

been introduced. Suffice it to say that the rivers are the same as yesteryear in name only.

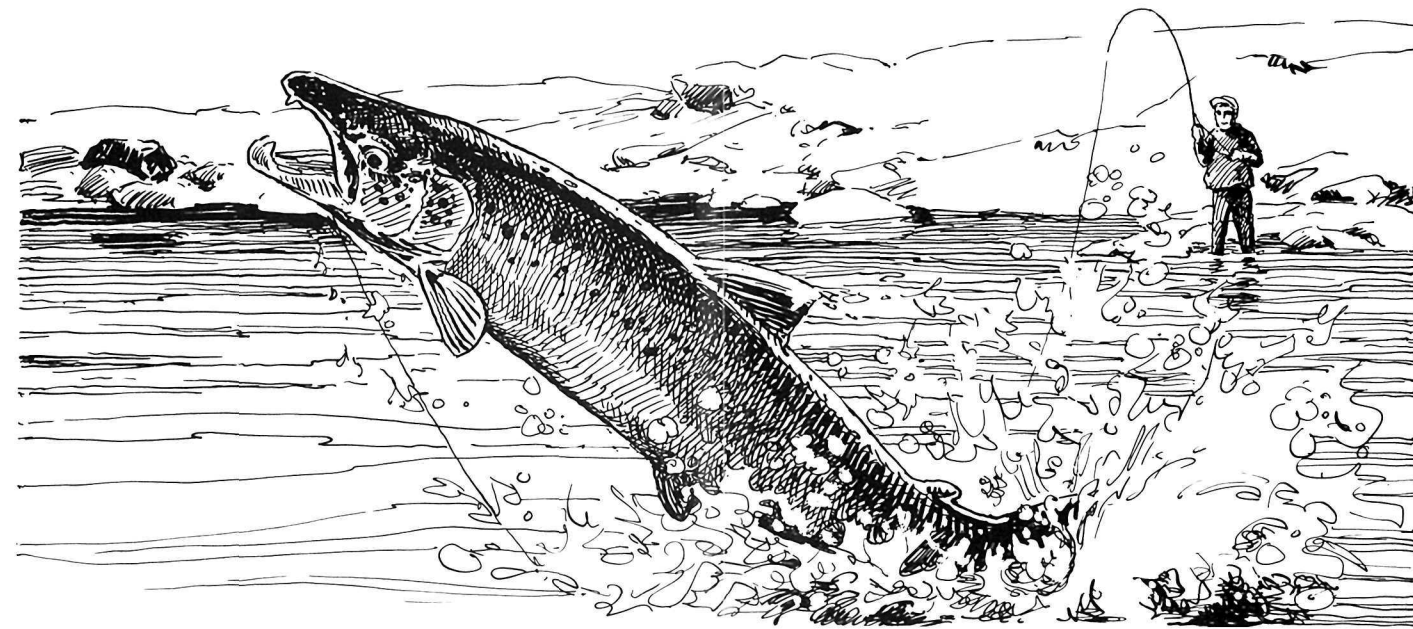
Much study yet must be devoted toward determining the suitability of New England rivers to support worthwhile populations of salmon. Consider that an adult salmon returning from the sea may enter its natal river in late spring or early summer, spend several months ascending to spawning grounds perhaps one hundred miles or more upstream, spawn in the fall, and winter in the river before returning to sea on the spring freshet. The adult fish has to have a sufficient flow of water and safe resting pools to enable it to survive the ascent to spawning grounds. Both the adult and its offspring need relatively pure, well-oxygenated water with moderate temperatures in winter and summer. The young salmon require an abundance of insect food, cover, and freedom from excessive competition or predation during their one to three years of river life before going to sea. The ecological facets involved in the salmon's river life are numerous and complex.

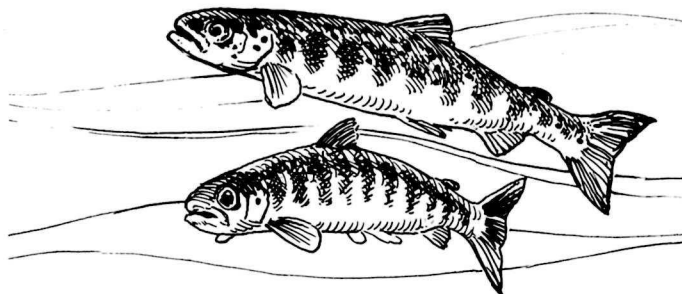
Improvements in river ecology may be necessary or desirable to enable restored salmon populations to thrive.

ABATEMENT OF POLLUTION. After decades of increasing industrial and domestic pollution, the trend is now reversed and progress is evident in the cleanup of some New England rivers. However, there is still a long way to go. The U.S. Environmental Protection Agency and its counterparts in the states have been active in defining pollution sources and setting standards and timetables for correction. Nevertheless, one may wonder whether an antienvironment backlash may precipitate delays or even instances of defiance in pollution abatement.

Despite the progress in reducing the older, gross forms of water pollution, new and more subtle forms of contamination deserve close watch for possible effects on aquatic communities. Many chemicals and airborne and waterborne pollutants may enter a river during the course of a year and directly or indirectly affect the welfare of salmon or its food organisms. A salmon, for example, may be exposed to fertilizers and pesticides from agricultural fields and to insecticides from forests infested by spruce budworm, from blueberry barrens and tree plantations, and from communities or recreation areas sprayed for blackfly control. It may also be exposed to road salt from highways, zinc leached from galvanized steel culverts, polychlorinated biphenyls (PCBs) from electrogenerating facilities, heavy metals from small-scale mines, and acid rain from airborne sulfoxides. Some of these chemicals or their breakdown products may interact in the river to form new compounds of unknown biological activities. Also, coincident exposures to two or more chemicals may cause additive or greater than additive effects in fish or aquatic invertebrates.

The effects of the multiple contaminants on fish depend on concentration, duration of exposure, life stage of the exposed fish, and pH and temperature of the water. Specific effects may include toxicity, alteration of swimming performance, aberrant behavior,





Parr—young salmon—remain in gravel-bottomed fresh-water streams for about two years before they migrate to the sea.

reduction in reproductive potential, and retardation of growth. Or, if the pollutants singly or in combination have no discernible effects on fish, there may be adverse effects on the aquatic invertebrates that serve importantly as food for the fish. For example, the insecticides used in the current efforts to control the spruce budworm in millions of acres of forest in Atlantic salmon areas in the United States and Canada have little or no direct effects on fish; but some stream-dwelling insects are killed, so the supply of food for salmon is thereby reduced for several weeks or more after each insecticide application.

The U.S. Fish and Wildlife Service and other agencies are studying the effects of pesticides and other pollutants on Atlantic salmon and other game fishes. The research, however, is difficult because of the many formulations of pesticides and pollutants involved, the numerous possibilities for multiple or immediately sequential exposures, the differing susceptibilities among several life stages of a fish to pollutants, and the influences of water quality and temperature on the biological activity of chemicals. Researchers and salmon managers will be hard put to keep pace with the increasing chemical pollution reaching rivers from intensive industrial, agricultural, forest, and highway development.

FISHWAY PROBLEMS. Atlantic salmon and other sea-run fish must have good access to spawning grounds that may be many miles upriver. Thus, fish lifts or fish ladders must be constructed at dams, and the responsibility for construction falls on the dam owners. Most of the dams are small and old, in contrast to the large flood-control/irrigation/power dams in the South and West. Most of the owners of New England dams are relatively small electric power companies, paper-making companies, and manufacturing plants. Although good progress has been made in building fishways in Maine and elsewhere, many still remain to be constructed at sites biologists consider critical.

Another facet of the fishway problem is the efficiency of the structures in passing salmon up or down stream. A fishway must be located properly at or near the base of a dam so that salmon are attracted to its entrance by the outflowing water. The slope of ladder and the velocity of water flow must suit the fish. A fishway also must function satisfactorily with modest

amounts of water, because storage is limited in most New England rivers and the competition for water is keen. The importance of efficiency is brought home if one considers, for example, a succession of dams with fishways on a river, each of which is only 70 percent efficient in passing fish. The loss at each successive fishway would leave few fish to attain and use spawning grounds beyond the last dam. Once the efficiency of a fishway is measured, steps to improve it may be needed.

FOREIGN EXPLOITATION. The discovery that Atlantic salmon from North America and Europe congregate on feeding grounds off the coast of southwest Greenland led to the rapid development of a high seas fishery in the 1960s, principally by Europeans. The heavy annual exploitation—up to 2,100 metric tons, equaling about 580,000 fish—was quickly reflected in declining runs of adults in home streams on both sides of the Atlantic. The impact was so great on runs in certain rivers in the Maritime Provinces of Canada that local commercial fisheries were closed and compensation was paid by the government to the idled fishermen. Responding to pressures by the United States, Canada, and the British Isles, as well as by private organizations, the foreign nations agreed to phase out the high seas fishery for salmon by 1976. The action, if taken on schedule, will correct one of the major problems in salmon restoration.

There is, however, an expanding commercial fishery for salmon off the eastern shores of Newfoundland that seems to intercept large numbers of fish that originate in other Canadian Provinces and Maine. The rising market value of salmon—now about \$2.50 per pound—and the militancy of the commercial fishermen will contribute to the difficulty of solving the growing problem in Newfoundland. Politicians must soon decide whether the fishery can be controlled adequately to protect the stocks of other provinces and the United States, or fishery managers must look to ways to produce sufficient salmon to ensure sustained replenishment of home-river stocks even in the face of overexploitation by commercial fishermen in distant waters. Either approach to a solution will be difficult.

POACHING. Poaching goes with salmon like rustling with cattle, and it has always been a problem. Royal decrees and regulations governing the taking of adult salmon in rivers date back many centuries in Europe, and fish wardens long have been employed to guard the salmon. Although authorities may discourage poaching, the facts remain that Atlantic salmon are highly prized big game, often tantalizingly vulnerable in small rivers, and easily converted to cash in the marketplace. For some persons, the motivation to poach a salmon—by jigging, spearing, shooting, dynamiting, netting, or poisoning—may be stronger than the desire to legally angle for one. An angler exults in coaxing a large salmon to take an artificial fly and conquering it on light tackle. But the poacher

thrice exults in conquering the salmon, escaping detection or pursuit by a fish warden, and beating the "establishment" that labels his efforts illegal.

There is no question that salmon need protection from overexploitation in rivers, especially when they are most vulnerable on spawning beds in shallow water. A one-to-one contest between a fish warden and a poacher may be viewed as a cop-and-robber episode of no great consequence. On the other hand, the high market value and great demand for salmon prompts highly mobile gangs of modern poachers with sophisticated gear to capture large numbers of fish, to great detriment of reproductive success. Moreover, the scale of their operations and investments in manpower and apparatus prompt ready resort to violence when they are threatened by wardens.

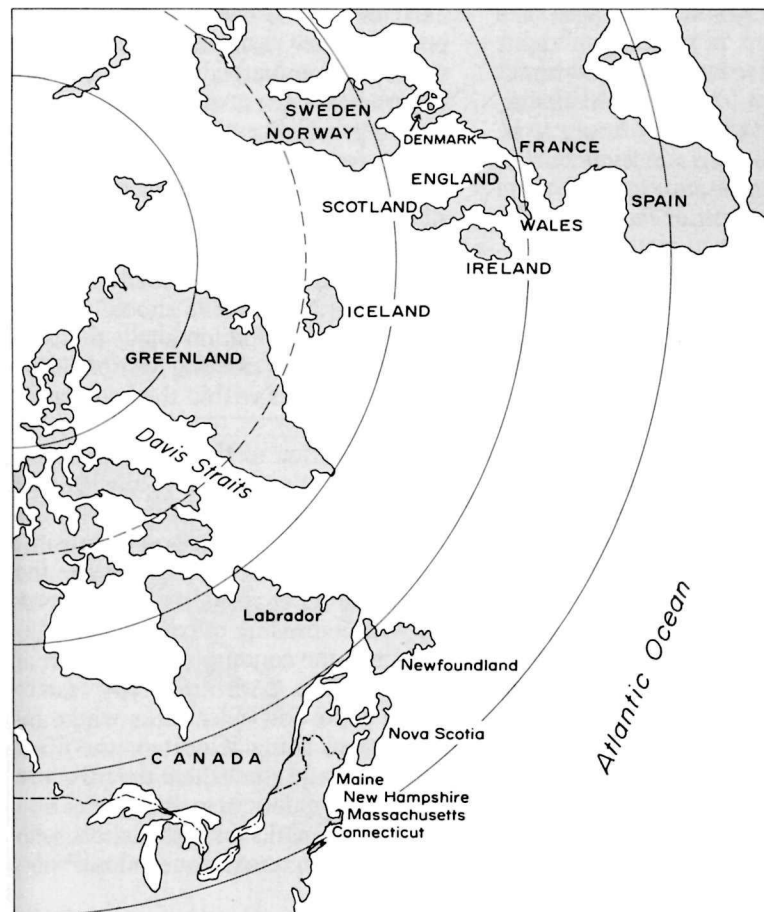
A measure of the severity of poaching in Canada was the high-level Conference on Illegal Atlantic Salmon Fishing sponsored by the International Atlantic Salmon Foundation, the Atlantic Salmon Association, and others at Montreal in 1974. The conference recommendations included standardized enforceable regulations on salmon; controls on purchase and sale of salmon; upgrading qualifications, training, and authority of warden and fishery officers; upgrading enforcement equipment and procedures; and application of severe penalties to violators.

No one knows how serious poaching may become in New England, but there certainly will be some. Recent experience in Maine demonstrates that poach-

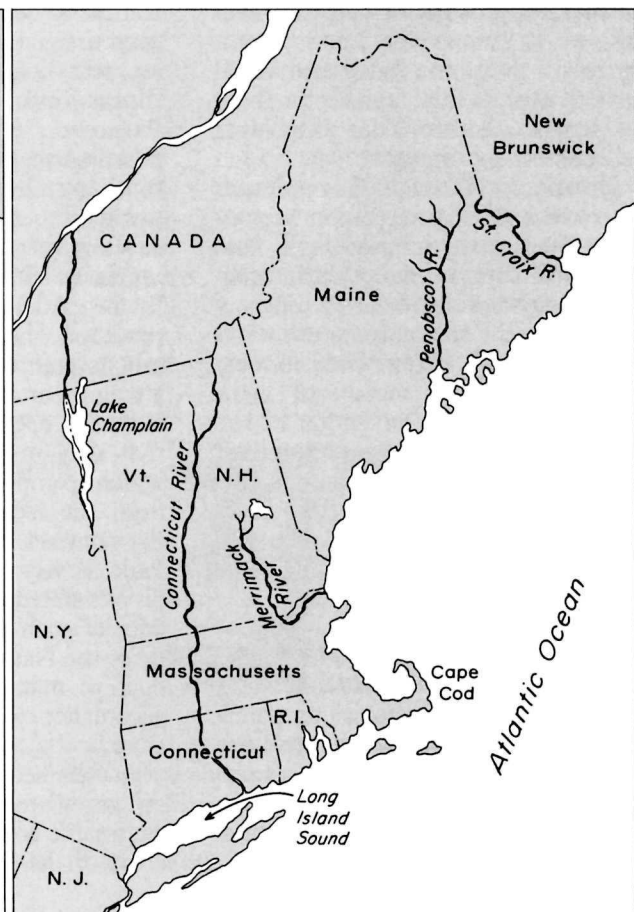
ing occurs as soon as salmon are brought back into a river system. Unfortunately, the necessity to protect restored populations of salmon from poachers will require siphoning off money and effort that otherwise could be used in improving habitat or stocking salmon.

THIS BRIEF REVIEW by no means includes all serious problems that will be encountered in the restoration of Atlantic salmon in New England. The pro-salmon enthusiasts and biologists know and appreciate the difficulties that lie ahead, and it is greatly to their credit that they have achieved an encouraging momentum in solving problems and advancing salmon restoration. Moreover, their efforts to restore salmon are more than selfishly oriented. They point out that the improvement of a river system to support Atlantic salmon also will enable the rebuilding of populations of American shad, American eel, alewife, striped bass, and freshwater game fishes. An improved river also affords new recreational opportunities for pleasure boaters, water skiers, swimmers, and waterfowl hunters. Land values certainly increase along improved waterways. Thus, we can view the salmon interests as leading a fight for environmental renovation that will benefit large fishing and nonfishing segments of society. ■

Dr. Robert E. Lennon, a fishery biologist with twenty-five years of research experience, is Atlantic salmon research coordinator for the U.S. Fish and Wildlife Service.



Atlantic Salmon Range



Restoration Efforts in U.S.

NPCA at work

CONCESSIONS

Sweetheart Deals Censured

In the continuing controversy over the operations of private concessions within the National Park System, the Subcommittee on National Parks and Recreation of the House Interior Committee recently began a series of oversight hearings—including upcoming field hearings—concerning both existing park concession operations and implementation and administration of the Concessions Policy Act of 1965. By invitation of this committee, NPCA presented testimony on May 25, 1976.

Last March the House Government Operations and Small Business committees jointly issued a report entitled "National Park Service Policies Discourage Competition, Give Concessioners Too Great a Voice in Concession Management." Many concessioners—particularly large corporate businesses that operate in the parks—cried "foul." They charged that because those committees traditionally do not have jurisdiction over park concession operations, the Interior committees of the House and Senate would have to express their wills before concessioners would consider themselves legitimately reprimanded.

Shortly after the Government Operations Committee report was issued, the Senate Interior parks and recreation subcommittee (with traditional jurisdiction) held a one-day hearing for the sole purpose of receiving testimony from the concessioners—consisting mostly of complaints about the intervention of the nontraditional committees into their previously sacrosanct operations. Although the Senate committee promised conservationists an opportunity to testify, it has yet to schedule such hearings.

More recently, the House Interior Subcommittee on National Parks and Recreation held four days of hearings in Washington on concessions policy and operations. The subcommittee has planned field hearings throughout the country during this summer and fall.

The first witnesses to appear before the subcommittee at the recent hear-

ings were two long-standing critics of the sweetheart deals given to concessioners by the Concessions Policy Act—Rep. Jack Brooks (D-Tex.) and Rep. John Dingell (D-Mich.).

Rep. Brooks' interest in concession activities stems from his earlier chairmanship of the Government Activities subcommittee of the Government Operations Committee. In 1963 he began an investigation of concessions, and in 1965 he led opposition on the House floor to the passage of the Concessions Policy Act. As current chairman of the full House Government Operations Committee, he was instrumental in securing that committee's investigation of concession operations.

Mr. Brooks informed the committee that the serious defects in the management of concessions that were evident as the result of his 1963 investigation have not changed. He stated, "Concession contracts are still being granted for lengthy periods of time—many for twenty years or longer. Concession contracts, renewal of contracts, and even assignment of concession rights are still being entered into without competition or public advertising. Preferential treatment continues to be provided to existing concessioners in renewing contracts. In fact, a trend toward monopolization seems to be developing."

One of the provisions of the act Brooks criticized most sharply was the provision whereby a "possessory interest" is granted to park concessioners giving them a partial ownership of the business operation and investments that they make in the operation for which compensation would be due from the federal government should the contract terminate or should the Park Service wish to modify it. Mr. Brooks stated that "in effect, the existence of such possessory interest paralyzes the National Park Service's freedom to manage the Park System in accordance with congressional directives."

On the second day of hearings the subcommittee received testimony from park concessioners from several areas of the Park System, as well as

from the chief advocate for overcoming commercialization of national parks—Don Hummel, chairman of the board of the Conference of National Park Concessioners (the trade association representing park concessioners). In addition to appealing for amendments to the Concessions Policy Act that would strengthen concessioners' control over park concession operations, Hummel claimed that "the Park Service is entitled to the protection of this committee from the widely varying demands of other congressional committees with peripheral jurisdiction. The continuation of these demands leads to chaos and detracts from the ability of the Park Service and the concessioners to provide proper service to the park visitor."

Quite to the contrary, NPCA testified at the May 25 subcommittee hearings, the concession operations of the National Park System need and now will undoubtedly benefit from direct and extensive involvement of Congress' principal watchdog committee, Government Operations. NPCA's policy regarding concessions in the parks is similar to that expressed in the National Park Service's (NPS) policy manual: "When adequate facilities exist or can be developed by private enterprise to serve the park visitor's needs for commercial services outside of park boundaries, such facilities shall not be provided within park areas."

Unfortunately, this policy has yet to be applied to specific park units, particularly in regard to overnight accommodations within parks. NPCA urged that during the development of each park's master plan NPS should require a careful determination about the continued need for existing visitor facilities and services within the boundaries of the park.

As a solution to the problem of providing visitor services and at the same time protecting park resources, NPCA testified that whenever possible visitor facilities should be located outside the park. In order to provide the Park Service with a measure of control or influence into the conduct of such external concessioners both in newly established parks and older parks where facilities are being relocated, the Park Service should grant them the privilege of operating public transit systems into the national parks for park visitors who use these "external concessioner" fa-

cilities. Contracts for external concessions should be granted concurrent with schedules for the phasing down (but not the phasing out) of private automobile transportation into and within the national parks. In contrast to the present situation, this external concession system would allow increasing numbers of visitors in a park with relatively fewer adverse impacts.

NPCA testimony covered two major policy areas regarding concessions in the parks. First, the Park Service has not adequately enforced and implemented the Concessions Policy Act of 1965 and has developed no means for systematically evaluating concessioner performance. Second, the Concessions Policy Act itself grants far too many special privileges to the concessioners.

NPCA's criticism of the failure to evaluate performance applied even to the concessioners' provision of visitor services and the compatibility of operations with park resources. The Park Service had no procedure for receiving, evaluating, or recording visitor complaints about concession services, and no systematic procedure for taking action on complaints.

Therefore, NPCA said that NPS should immediately publish regulations for such procedures in the *Federal Register*. Although the Park Service just recently issued a directive to its regional directors regarding evaluation of concessioners, NPCA testified that the directive is not sufficient and that the concession evaluation procedure should be committed to regulations available for public comment in draft form.

Regarding concessioners' privileges, NPCA called for "revision, if not outright repeal," of the provision in the

Concessions Policy Act that grants a concessioner possessory interest to use structures, facilities, or services provided under the terms of his contract with the NPS. NPCA explained that three major problems result from the granting of possessory interests under present conditions.

First of all, concessioners inevitably build up large vested interests in each national park in which they operate, resulting in aggressive profiteering—often at the expense of public service in the park. Second, if the Park Service wishes to terminate a concessioner contract on the basis of inadequate service to the public or an unsatisfactory state of repair of facilities, the high cost of compensation for acquisition of possessory interests may deter this decision. Thus, the Park Service is badly handicapped in managing concessions because concessioners disregard management directives unless the Park Service demonstrates a capability of buying out their possessory interests.

The third problem is that in every case in which the need has arisen, citizens have found themselves at a disadvantage when arguing the need for phasing out concessions. They must not only argue the inappropriateness of concession facilities, but must also face the problem of a low priority of funds for acquisition of possessory interests in conjunction with a generally inadequate NPS budget.

In essence, the granting of possessory interests amounts to a sale of part of our park lands for the sake of financing visitor facilities in those parks, with a consequent loss of control over the concession operations. NPCA strongly recommended in its invited testimony amendment of the Concessions Policy

Act to repeal the provision for possessory interests and, in its place, establishment of a program whereby expansion, improvement, or enlargement of park concessioner facilities would be accomplished by the NPS with appropriated funds.

Among other special privileges granted to concessioners by the Concessions Policy Act is preferential treatment whereby the Secretary of Interior grants contract extensions, renewals, or new contracts to present concessioners who have performed satisfactorily, and generally authorized the operation of all accommodations, facilities, and services for visitors by one concessioner in each park. In addition, NPCA charged, concessioners are virtually guaranteed contract renewal even at the end of a thirty-year contract. Unsatisfactory performance is the only ground for terminating a contract, but inasmuch as NPS has no adequate mechanism for determining satisfactory performance, preferential renewals are granted automatically.

NPCA concurs with a recommendation of the joint committee's March report on concessions that "the Congress should consider amending section 5 of the Concessions Policy Act of 1965 to eliminate the preferential right of the concessioners of the National Park Service to renew their contracts or permits, and in lieu thereof, provide for such renewals after public notice and adequate opportunity for meaningful competition by other persons, including small business, and after a careful evaluation of the concessioners' performance to determine if such renewal would serve the public interest more than would an award of the concession to another person."



The wood stork, the only North American stork, feeds by groping into the shallow ponds and streams of the Everglades for small fish concentrated there by falling water levels. Occasional sightings of the rare Florida Panther are dramatic reminders that much of the Everglades is still wild. These drawings by Dan Feaser and nine others by him are available in a wildlife portfolio selling for \$5.00 from the Everglades Natural History Association, P.O. Box 279, Homestead, Florida 33030. Reproduced courtesy of the Association.

The present provision leads to monopolies. Resulting lack of competition, coupled with a concessioner's possessory interests, long-term contract, and lack of fear of unsatisfactory evaluation by the NPS means poorer service to park visitors and defiance of Park Service authority.

The trend in recent years toward purchase and operation of park concessions by conglomerate corporations results in a tendency on the part of the conglomerate concessioner to view the parks primarily with profit motives rather than with proper recognition of the dual responsibility to provide public services and to protect the public interest in the preservation of the parks. These concessioners will seldom, if ever, concede that preservation takes precedence over use in National Park Service policy matters. In addition, these concessioners, because of their considerable presence in other fields and in other parts of the country, tend to wield considerable political influence.

As noted by a recent Interior Department concessioner task force report, "concessioners are well aware of their ability to influence decision-making by making direct appeals to political figures or to the higher levels of the National Park Service or the Department of Interior. One result, at least in isolated cases, has been decision-making that did not reflect the views of lower level managers, or worse, did not even take into account the views of lower level managers. Another result is that such decisions tend to be uninformed if not wrong."

These same conglomerate concessioners also tend to support incompatible developments and activities within the parks to a greater degree than the smaller concessioners. Downhill skiing, motorboating on park lakes, golf, tennis, or swimming pools represent activities or facilities that are incompatible within the boundaries of natural and historic units of the Park System and that in all cases are operated by concessioners.

Consequently, NPCA has advocated an antimonopoly principle regarding concessions to the effect that no company may operate a concession in more than one national park.

In conclusion, NPCA called for major improvements in implementa-

tion of the Concessions Act, extensive amendment of the act to lessen the power of park concessioners, the commitment of concessions policy to regulations available for public comment, and a restatement of the policy that the primary purpose of park concessions is not to make money for the concessioner or the government but to provide the best service to visitors while protecting park resources.

WILDLIFE REFUGES

Impact Statement Weak

More than 100 million waterfowl, nearly half the estimated 416 species of North American mammals, and 44 different species of animals on the brink of extinction are dependent on the 385 U.S. wildlife refuges for protection, a recent U.S. Fish and Wildlife Service (FWS) draft statement indicates.

In recent comments for public hearings on a draft environmental impact statement (DEIS) on the operation of the National Wildlife Refuge System, NPCA told FWS that certain activities within refuge boundaries are inter-

fering with protection of wildlife and demand further investigation in the statement.

Issuance of a DEIS is a result of a successful lawsuit by NPCA and two other groups (see July 1975, p. 22) that required FWS to prepare a statement with each annual budget request so that the public could review budget and policy decisions made by the Administration and their effects on refuge resources.

NPCA commented that in general the recent DEIS fails to establish policies that will effectively protect wildlife within refuge boundaries. We believe that more adequate funding should be made available so that the National Wildlife Refuge System will not have to be in the business of commercially using these lands in order to meet day-to-day management expenses. A basic resetting of FWS priorities for refuge management is essential to reemphasize *wildlife* and deemphasize or eliminate commercial and exploitative uses of refuges.

Some of the more destructive practices include mineral leasing, rights-of-way, grazing, and poor forest management.

For instance, the Delta region of the Mississippi River is a fragile wetland environment that provides habitat for many species of migratory birds and several endangered species. Yet this area (which includes Delta and Lacassine National Wildlife Refuges) has an extremely high concentration of mineral excavating sites, pipelines, and pumping stations.

Rights-of-way for vehicular access in areas such as Back Bay National Wildlife Refuge in Virginia should be more thoroughly controlled, if not eliminated.

These mineral leases and rights-of-way disrupt habits of nesting waterfowl, kill vegetation, and in general disturb the wildlife habitat of the area. The DEIS briefly mentions the existence of these activities but fails to adequately justify their existence. Complete data should have been included regarding available funding versus costs of rehabilitation and the justification (if any) for such uses of refuge land.

Grazing of domestic livestock should not be permitted on national wildlife refuge lands, NPCA asserted.

Ethnic Celebrations

In celebration and recognition of America's varied ethnic groups, scores of special Bicentennial programs are being presented in National Park System areas this year. For instance, to acquaint children with aspects of Algonquin Indian culture, Virginia's Colonial National Historical Park, which includes Jamestown, Colonial Parkway, and Yorktown battlefield, is conducting a summer-long series of tours, activities, and demonstrations. A sound and light program at San Juan National Historic Site dramatizes Puerto Rico's history with an original musical score that combines the music of the island's three major cultural groups: the Taino Indians, the Spanish, and the Africans. The history of the Ozark region in Missouri and Arkansas is recounted in a regular program at Ozark National Scenic Riverways, Missouri, by a park interpreter who assumes the role of Henry Schoolcraft, a native of Vermont, who traveled the Ozarks during 1818 and 1819. Members of the Choctaw, Chickasaw, Creek, Seminole, and Cherokee tribes are conducting a ten-week Indian crafts program at Ocmulgee National Monument, Macon, Georgia. Songs and dances of Portugal will be featured at the Cabrillo Festival, September 26 to October 3, at Cabrillo National Monument, San Diego, California. At Golden Gate National Recreation Area, San Francisco, more than one hundred performing groups, including Blacks, American Indians, Hispanics, and Asians, will join together October 9-11 for a Western Bicentennial Folk Festival.

Natural processes should predominate. If grazing is as beneficial as the DEIS leads us to believe, then species of wild grazing animals could better undertake this function. Damages caused by erosion and hence the cost of rehabilitation are too great to justify intrusion of privately owned animals on the limited government lands available. Adverse impacts of herbicides and insecticides have not been assessed, and these chemicals should be totally banned from refuge lands.

Furthermore, NPCA pointed out, FWS policy and thus the DEIS fail to recognize that these lands are *wildlife* refuges, not tree farms. Nearly one-third of the forested areas on refuge lands are of commercial variety; and harvested timber is used for firewood, pulp, and Christmas trees. The disruption caused by the harvesting is surely not in the best interests of wildlife, and FWS seems to be placing financial gain over protection of wildlife. In the past, increases in the budget for management of these lands have gone for research supporting timber production rather than research for more natural forestry practices.

NPCA also pointed out that although FWS permits hunting and trapping in many refuge areas and has become lax in regulating these activities, the DEIS fails to properly assess the environmental impacts of such activities. Hunting and trapping are illegal in national wildlife refuges except "under rules and regulations" set by the Secretary of Interior. However, the DEIS does not clearly state rules currently in effect nor demonstrate the reason for allowing hunting and trapping. NPCA noted that certain endangered species have been affected and that protection of these species must take precedence over recreational activity. The impacts of hunting and trapping on nontarget species should be fully assessed in the final EIS.

NPCA also objected to the fact that at the same time that the draft statement promotes commercial and exploitative uses of refuges, it deemphasizes recreational uses of much less impact such as camping and picnicking.

NPCA urges substantial funding for the refuge system along with a drastic reorganization of budget and personnel priorities. A greater proportion of funds

should be directed toward research and development of a *natural* wildlife management program. Greater emphasis should be placed on protection of endangered species, habitat preservation, wildlife observation, and education. A high percentage of manpower allocated to the system should be working in the field rather than in offices.

NPCA believes that the impact statement was written to justify present management practices rather than to objectively describe the environmental impacts of the programs. We find it disturbing that the federal agency charged with protecting our wildlife refuges could have prepared such a draft statement.

At press time the *final* environmental impact statement on the "Operation of the National Wildlife Refuge System" was due to be published in mid-July. There will be a thirty-day comment period. If you would like to obtain a copy or to protest the errors in the draft, write immediately to the following and send NPCA a carbon if possible:

Director, U.S. Fish and Wildlife Service

Division of Wildlife Refuges
Washington, D.C. 20240

GREEN SPRINGS

Kleppe Urges Protection

NPCA recently lauded Secretary of Interior Thomas S. Kleppe for urging W. R. Grace & Co., one of the nation's largest mineral and chemical conglomerates, to reassess their plans for mining in the Green Springs National Historic Landmark in Virginia. The company has plans to strip-mine 2,000 acres of the landmark for vermiculite, the main ingredient in cat litter.

The Green Springs area contains a large number of eighteenth and nineteenth century plantations and historic farms. Thirty-four of these structures are listed on the National Register of Historic Places. The area became the first rural national historic landmark when the Interior Department designated 14,000 acres of Louisa County east of Charlottesville, Virginia, for preservation in 1974. However, the designation has no direct force of law in preventing private or industrial development or mining.

Mr. Kleppe called on the corporation

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Memo to Members

Dear Friends,

As I handle national park issues on a daily basis, I am continually struck by the similarity between the threats to the integrity and continuity of the National Park System during the early years of this century and those with which we grapple today.

On May 29, 1919, Stephen Mather, then the first National Park Service director, Robert Sterling Yard, newspaper editor and first publicity chief of the fledgling Park Service, and others met at the Cosmos Club in Washington, D.C., and organized the National Parks Association (NPA) "to defend the national parks and national monuments fearlessly against the assaults of private interests and aggressive commercialism." Another early objective of the NPA was "to encourage the extension of the national parks system to represent by consistently great examples the full range of American scenery, flora and fauna, yet confined to areas of significance so extraordinary that they shall make the name national park an American trademark..." These two objectives, protection and expansion of the National Park System, remain as the primary focus of our work in 1976.

In the early years the NPA waged great battles within and without the government under the banner, "Hands Off The National Parks." Through 1920 and 1921 NPA fought efforts to open up the parks for construction of large irrigation dams. Pressure from the NPA and others defeated attempts to dam the Falls River in Yellowstone and St. Mary's and Waterton lakes in Glacier National Park. In March 1922 the NPA reported that a bill had been introduced in Congress to open all units of the national park system to mining. In January 1926 the NPA *Bulletin* reported on efforts to permanently save the coast redwood trees from the lumberman's axe, and that cattle and feral goats in Hawaii Volcanoes National Park were seriously threatening the unique Hawaiian flora.

Today, under our revised name, Na-



tional Parks and Conservation Association (NPCA) continues to combat many similar attacks on the National Park System. Jackson Lake in Grand Teton National Park, a reservoir held for irrigation purposes, presents significant problems today due to drawdown in lake levels in peak visitor season. Dams forming Lake Mead National Recreation Area and Glen Canyon National Recreation Area on the Colorado River have flooded highly scenic areas that should have been left undammed and included in Grand Canyon National Park. Proposals continue for a dam in Marble Canyon on the Colorado River within the park, which thus far conservationists have blocked.

NPCA has been trying to have many Hawaiian plants added to the endangered species list and is still seeking total elimination of feral goats and pigs from the Hawaiian national parks because of the havoc that these exotic animals wreak on native plants.

Six parks were left open to mining and mineral entry when they were added to the National Park System. NPCA is supporting efforts to have these areas closed to future mining and mineral entry to prevent damage to national park lands.

Although a Redwoods National Park of some 56,000 acres was authorized in 1968, conservationists are still engaged in a major battle to prevent harm to the park from destructive and unregulated clearcutting on private lands adjacent to the park.

In 1919 there were 16 national parks and 34 national monuments. Now the

Park System has grown to 37 national parks, 81 national monuments, and 170 recreational and historic areas. During NPCA's active history we have helped the Park System to grow by the addition of many magnificent new areas: Olympic, North Cascades, Redwoods, Kings Canyon, Bryce Canyon, Arches, Canyonlands, Grand Teton, Big Bend, Guadalupe Mountains, and Capitol Reef national parks in the West; and Mammoth Cave, Shenandoah, Great Smokies, and Everglades national parks in the East.

Today NPCA supports the addition of at least 11 more new areas to the National Park System from the vast wilderness lands in Alaska, including Gates of the Arctic National Park, Wrangells-St. Elias National Park, and Lake Clark National Park. The Alpine Lakes region of the Cascade Range in Washington, the Tallgrass Prairie in the Flint Hills of Kansas, the Congaree Swamp in South Carolina, and many smaller natural, recreational, and historic areas have been proposed for addition to the Park System.

NPCA's efforts depend for their success almost entirely upon the active support and participation of our members. A slogan adopted by the NPA in February of 1937 is even more appropriate today: "Progressive as the men and women behind it" indicates to me—and I hope to each of you—that continued expansion of our efforts and the perpetuation of our goals depend on your active involvement in the Association's work.

Sincerely,

T. Destry Jarvis

*Administrative Assistant,
Parks & Conservation*

P.S. One way to be involved is to help NPCA grow by enlisting a new member. Such help enables us to cut back on promotional mailings and direct more of your dues and contributions to our conservation programs. The envelope enclosed describes the portfolio of park scenes you and your friend will receive as thanks for the new membership. In addition, we are extending our offer of the eagle painting from the July cover; it will be added to your portfolio as a special Bicentennial bonus.

to cooperate in "protecting our national heritage for future generations of Americans" by donating its mining rights under a scenic easement program. Property owners of more than half the land within the Green Springs district have already prevented mining on 7,000 acres that surround the disputed vermiculite deposits by the use of scenic easements—legal agreements by which a landowner places specific restrictions on the use and development of his land, giving the government the right to enforce the restrictions in perpetuity.

According to an Interior Department official, the Grace Company, which has very large vermiculite reserves in Montana and South Carolina, could take a substantial tax deduction by giving up its mining rights.

In urging the company to help preserve historic Green Springs, Mr. Kleppe declared that mining, processing, and related transport disruptions would "be incompatible with the cultural and scenic values" of the area despite the company's claim that it would fully restore the farmland after mining.

DOLPHINS

Fishermen Appeal Ruling

Although on May 11, 1976, Federal Judge Charles R. Richey issued a sound ruling that the "taking" (killing) of dolphins (porpoises) by tuna fishermen is in violation of the Marine Mammal Protection Act (MMPA) of 1972, the tuna industry appealed the ruling and was granted a temporary stay for the rest of the 1976 tuna fishing season. The May 11 ruling resulted from litigation by the Environmental Defense Fund, NPCA, and twelve other environmental groups.

Porpoises and yellowfin tuna are often found swimming together. In the 1960s the tuna industry began to exploit this relationship by using porpoises to locate schools of tuna, then intentionally setting purse seine nets around the porpoises in order to catch the tuna. Since 1960 this practice has resulted in more than 3 million porpoises suffocating or drowning when caught in the nets (134,200 in 1975 alone).

Section III of the MMPA established a two-year period in which tuna fishermen were allowed to take marine

mammals with the understanding that they would seek new fishing techniques that would do the least damage to marine mammals, making it their "immediate goal" to reduce "the incidental kill or incidental serious injury of marine mammals . . . to insignificant levels approaching a zero mortality and serious injury rate."

When this two-year period was terminated on October 21, 1974, the American Tunaboat Association (ATA) applied for a permit to continue to take porpoises incidental to fishing for yellowfin tuna. The National Marine Fisheries Service granted them a permit without placing any quota on the number of dolphins to be killed. A similar permit was granted in 1975, and 232,000 porpoises were killed in those two years.

NPCA and the other plaintiffs contended that the permits were not in compliance with the MMPA and demanded a strict quota on porpoise kills for the 1976 fishing season. The plaintiffs argued that the primary purpose of the MMPA is to protect marine mammals and that other interests, such as the tuna industry, could be served only after assuring the protection of these animals. NPCA also asserted that the permit regulations for taking of porpoises failed to supply information critical to a determination of whether the marine mammals would be adversely affected and the impact on achieving or maintaining optimum sustainable population levels.

At the time of passage of the MMPA, House Merchant Marine and Fisheries Subcommittee Chairman John Dingell (D-Mich.) plainly stated, "Before issuing any permit for the taking of a marine mammal, the Secretary must first have it proven to his satisfaction that any taking is consistent with the purpose and policies of the act . . . that is to say, that taking will not be to the disadvantage of the animals concerned. If he cannot make that finding, he cannot issue a permit. It is that simple." For these reasons and many more Judge Richey decided that the incidental killing of porpoises is in violation of the MMPA.

One of the most persuasive arguments used by the ATA is that termination of purse seine fishing would do irrevocable harm to the tuna industry and cause tuna prices to rise substan-

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tially. However, there is no evidence that a return to hook-and-line fishing for yellowfin tuna would have any lasting effects on the tuna industry. Only a small percentage of tuna fishing worldwide is done by the purse seine method and only 10 to 15 percent of the total tuna consumed in the United States is caught "on porpoise." Economically competitive alternatives are open to that part of the U.S. fleet that fishes tuna on porpoise. Moreover, many economic variables are now affecting the price of tuna and industry claims about price rises as linked to the dolphin issue are misleading. If necessary, it seems that most Americans would be willing to pay higher prices to ensure the safety of porpoises.

Judge Richey addressed these problems adequately when he said, "Steps which ensure the protection and conservation of our natural environment must almost inevitably impose temporary hardships on those commercial interests which have long benefited by exploiting that environment."

Thus, Judge Richey's decision was based on solid evidence. However, following an ATA appeal of the decision, an appeals court granted the fishing industry a temporary stay for the month of June—allowing the tuna fishermen to continue to kill porpoises through the balance of this year's tuna fishing season. At press time the appellate court was expected to decide the ATA's appeal in July and the National Marine Fisheries Service had just come up with a new quota of 78,000 porpoises for 1976.

Meanwhile, at this writing hearings were scheduled on legislation introduced as the result of the court decision. (See Conservation Docket.)

OCEAN LEGISLATION

More U.S. Unilateral Action

NPCA has testified on invitation on a deep seabed minerals bill now under consideration in Congress that could threaten negotiations for a comprehensive multinational ocean agreement even more than the new law establishing a 200-mile offshore fishing jurisdiction for the United States.

(In spite of NPCA recommendations to the contrary, presented in invited testimony, legislation establishing the 200-mile limit passed Congress. In the final version signed by the President, PL 94-264 provides that any future in-

ternational agreements made by the United States on fisheries will take precedence over the new law, which is scheduled to go into effect in March 1977.)

Now both the House and the Senate are considering a Deep Seabed Hard Minerals Act (S 713 and HR 11879) that would allow the Secretary of Interior to issue to eligible applicants licenses for specific blocks of seabed for the mining of manganese nodules—mineral composites of manganese, cobalt, nickel, and copper—found on the ocean floor.

The mining of these accretions has come under the Law of the Sea (LOS) Treaty negotiations for more than five years. In one of a series of hearings on the deep seabed mining bills, Samuel L. Levering, Secretary of the U.S. Committee for the Oceans, a private public interest group, recently said, "HR 11879 goes directly contrary to the trend at the LOS conference. Its passage now would isolate the United States at the summer LOS conference and damage or destroy the chances of getting a treaty which the United States could sign." Both the House and the Senate versions of the bill are still in committee.

The fourth session of the third United Nations Conference on the Law of the Sea will be under way in New York City from August 2 through September 17. NPCA President A. W. Smith is a member of the U.S. delegation to the conference.

At recent Senate and House hearings on the status of LOS conference negotiations, Ambassador-at-Large T. Vincent Learson, the head of the United States delegation to the conference, told the senators, "I feel at this point that we have a better than even chance of . . . obtaining an acceptable treaty." But the senators expressed doubts concerning the outcome of certain points being negotiated in the treaty they consider to be vital to U.S. interests, such as the amount of power granted to the supervisory agency (to be set up by the Treaty) for controlling access to and production of mineral resources on the seabed.

Senator Metcalf, who introduced the Senate bill, said Congress would continue work on the bills despite continuing treaty negotiations. NPCA has testified on invitation with respect to earlier versions that they were detri-

mental to LOS negotiations and environmentally unsound because they contained inadequate safeguards for the protection of the ocean environment during exploration, extraction, and transportation of mineral resources. At press time it was expected that this legislation would be pending floor action in Congress at about the same time as the LOS session.

BARRIER ISLANDS

NPCA Wants You

The protection of barrier islands and barrier beaches such as those at Assateague National Seashore, Cape Hatteras National Seashore, Point Reyes National Seashore, and others that are a part of the National Park System has been a great concern of NPCA.

The large-scale development of other barrier islands for their resources and for recreational and resort purposes threatens their very existence and ultimately the existence of other ecosystems that depend on them for support and protection. In spring 1976 NPCA was a sponsor of a national Barrier Islands Workshop funded through the Conservation Foundation. The Association will continue to be involved in the problems that threaten barrier islands and beaches, but to do this, we need your help.

Those of you who are willing to share your knowledge of the geography, wildlife, plants, proposed development, and government regulation of one or more barrier systems can be of great help to NPCA. You will be made an NPCA Contact Person for Barrier Islands and Beaches and would supply us with information on the area or areas in which you are interested. In turn, we would keep you up-to-date on national developments both by letter and through the magazine.

In addition, a number of environmental groups, including NPCA, have drawn up tentative plans to conduct a comprehensive national survey of all barrier systems. Contacts could contribute to the survey and then benefit from the information compiled.

Any NPCA member who lives near or who is familiar with a barrier island or beach and wants to become an NPCA Contact Person should write Rita Molyneaux, Administrative Assistant, NPCA, 1701 18th St., N.W., Washington, D.C. 20009, or telephone (202) 265-2717.

ENDANGERED PLANTS

Plant-lovers Needed

The movement to protect endangered species of plants marked a turning point in June when the U.S. Fish and Wildlife Service (FWS) of the Interior Department proposed 1,779 species for listing as endangered. If listed, these will be the first plants protected under the Endangered Species Act.

Another hopeful sign was the Bicentennial Symposium on Endangered and Threatened Species of Plants in the Americas, a May conference sponsored by the New York Botanical Garden that generated increased interest in conservation within the botanical community and valuable publicity. NPCA was represented.

NPCA welcomes the Interior proposal because the plight of endangered species of plants is more urgent than ever. A recommended list of plants prepared by the Smithsonian Institution pursuant to the Endangered Species Act has been public knowledge since January 1975. Meanwhile, destruction of plant habitats has continued at an alarming rate, and some people have destroyed plants on the Smithsonian list in fear of future prohibitions on development. Wholesale dealers and collectors bring the specter of extinction ever closer for some species, particularly cacti; and endangered plants still turn up for sale in stores. Commercial interests that oppose listing plants under the Act have pressured the government.

Nevertheless, despite severe understaffing for studying endangered plants (the Office of Endangered Species has only two botanists), on June 16 FWS proposed the endangered list. The species range from delicate 10-inch orchids and insect-eating pitcher plants to 120-foot trees and include cacti, wildflowers, shrubs, grasses, ferns, and trees in forty-six states. More than half of the 1,779 occur in Hawaii, where almost 100 percent of the native flora is endemic—peculiar to this area and found nowhere else; thus much of Hawaiian flora is vulnerable to development and to destruction by nonnative feral animals against which the plants are defenseless. State officials want to convert much of Hawaii's vegetation into commercial forests of exotic species, and the Smithsonian list has drawn fire.

The proposal represents the endan-

gered portion of the Smithsonian list, which has been revised through cooperation of FWS and that institution. Approximately 1,200 other species are listed on the Smithsonian's revised list as threatened and hopefully will be proposed for listing under the Act.

FWS notes that it prepared the way for publishing its proposed list by publishing a proposed regulation on June 7 interpreting the Act's prohibitions and scientific permit regulations regarding endangered and threatened plants. The proposal would prohibit



The yellow Trollius laxus, proposed as endangered, grows in bogs in the northern states, habitats that are fast disappearing.

interstate and foreign commerce in listed plants for commercial purposes, importation, exportation, and related activities. In contrast to protection of animals, the 1973 law provides no restrictions on the "taking" (removal) or possession of listed plants nor on intrastate commerce.

Furthermore, no lands can be acquired to save endangered or threatened plants unless the Interior Secretary submits these plants for listing under the Convention on International Trade in Endangered Species of Wild Fauna and Flora. (In invited testimony, NPCA recently urged Congress to amend the Act to strengthen the protection offered to plants.) An April 13, 1976, Presidential order confirmed that the Interior Department is the U.S. management authority under this convention and provided for an Endangered Species Scientific Authority. This executive order also designates the Secretary to act on behalf of this nation in regard to the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, a

treaty ratified by President Roosevelt in 1941 that is just being implemented by the Endangered Species Act and this order. Bruce MacBryde, chief botanist in the Office of Endangered Species, pointed out at the May New York Botanical Garden symposium that this overlooked convention has great potential for habitat preservation.

The symposium underscored the need in all regions of this nation for habitat protection and protection of commercially exploited species. Without hope of official federal protection, the prospects for endangered plants generally would seem dismal.

For the most part state laws—where they exist—are unworkable and do not result in convictions. State efforts related to endangered plants cover a wide range. Botanists and other citizens in a number of states are concerned about the problem. California has an active ongoing program for endangered and threatened plants but has been hampered in protection efforts by the lack of a national list. Some states refuse even to consider the issue. Some state agencies give plants minor emphasis while other states have no agency in charge of protecting plants. One state designated the state weed control supervisor as an endangered plant liaison.

The symposium reaffirmed that the need for plant protection is an international problem and is vital to preserve ecosystems. As a plant goes, so go animals that depend on the plant; human survival ultimately is tied to that of the plant kingdom.

How to Help:

- Write to congratulate the Interior Department on proposing 1,779 plants for listing as endangered; urge action on the list and submission of the names of endangered plants to the Convention on International Trade in Endangered Species on a timely basis, as well as additional personnel to work on endangered plants. Write to Hon. Thomas Kleppe, Interior Secretary, Washington, D.C. 20240. (To save staff time, indicate whether your letter does not require a reply.)

- Send comments in support of the FWS proposed list as soon as possible. (NPCA will be commenting.) Interested persons have *until August 16* to comment on the June 16 rulemaking listing the plants. Include, if you like, any information on plants on the list that occur in your area, critical habitat, or threats to plants. *August 9* is the deadline for comments on the June 7 regulations concerning prohibitions. (These deadlines might be extended.) Copies of the proposed list are available. Write: Director, FWS/LE, Interior Department, P.O. Box 19183, Washington, D.C. 20036.

OPEN LETTER: CYANIDE BOMBS

A real life and death drama occurred Easter Sunday which demands attention from our highest state and federal officials. Although restrained by natural concern for neighbors and fellow ranchers, I must appeal for your understanding of the danger of *cyanide bombs*.

On the third day of our backpack hike, we entered a gate which had no warning sign. While considering which direction to travel, one hiker in my group of Boy Scouts called back from one hundred yards ahead saying, "Dad! A little booby trap just sprayed powder in my face!" God alone can know the agony of those moments as boy, father, and comrades began to realize what had happened. With eyes intent on rocks and plants, he had investigated a curious stick protruding from the ground. He had attempted to pick up a cyanide trap set to kill coyotes. Dumping packs, finding the warning sign, reading that faded sentence to death, I searched my terrified mind for some guide to action that could save this life more precious than my own! Amyl nitrate (the antidote listed), like the nearest hospital, was thirty miles away, with three miles of rocks and brush to the nearest phone and auto! How does one dilute the terror in a young mind so well aware that *cyanide* and *death* are synonymous?

Holding hands as when he was three rather than six feet tall, we ran through cactus and down canyon. Leaving him by a pond to wash (die?), I ran on—over fences and through mesquite, cursing my slowness and praying for breath and directions. Perhaps He was impressed with the scene, for a life was spared. An hour or so after this brush with death, the doctor assured us all danger was past. . . .

We must eliminate these damnable things from our fields and pastures. Life is plainly too short to be snatched so needlessly from the foolish and unsophisticated, who are mostly the young! Read the statistics! Have we lost 100 or 10,000 calves and lambs to coyotes and wolves? Which number will you gamble against a boy's life? To keep the predators in check, we must set aside the pseudoscientific, automatic, sweat-free approach so popular in our time, get off our collective ass, out of our pickups, learn new and rediscover old techniques.

My credentials for speaking to this issue go beyond the above experience: land owner in three counties, cattle raiser for twenty years with sizable agricultural investments. This month, on the farm on which we live, we interrupted three coyotes eating a calf still dangling, half born from a good heifer. I despise thieving predators with a passion.

It is nothing compared to the loathing I feel for a stupid, yet lethal contraption which knows not the difference between coyote and boy!

The question of trespass and property rights be damned! The government killer drove across my property to reach that tragic location. Even Boy Scouts get lost and I've seen cross-country runners and government agents wander across my private domain, not to mention poachers and common thieves. Who has the moral or legal right to booby trap any one of these? Our justice system protects the most heinous criminal from being gassed, yet will allow an innocent boy to be booby trapped by that *same gas—cyanide!* . . . This subject cannot be allowed to rest until every state and federal agency is cured of the bureaucratic idiocy which permits, even encourages, the use of cyanide booby traps. The Department of Interior has a trapline through 44 Texas counties, and our state Department of Agriculture operates along the Pecos we're told. The much-maligned Mr. Nixon, by presidential decree, banned all cyanide booby traps in 1972. It took 14 human "accidents" to get his attention. Mr. Ford's administration, misquoting an old adage, "build a better cyanide trap and the voters flock to your party," authorized the use of the new M-44. Please read the *Federal Register*, September 29, 1975 [available in any large public library]. Several thousand words of Washingtonese are designed to convince the dimwitted that the little spring-loaded gadget ranks with the electric toothbrush in utility and innocence. . . .

The immediate requirement is that all M-44 cyanide bombs be gathered up before our Texas spring weather brings more wanderers. This can be accomplished only by state and federal officials disregarding political expediency, and asserting their moral duty to protect the innocent public. It appears that the future requires the problem of predator control to be reexamined in light of old technology and modern biological science. Who will believe that the moon is more accessible than a discriminating method of eliminating coyotes? However severe our state and national predator problem, it does not justify even *one* chanced exposure of the unsuspecting to deadly cyanide. If human starvation were rampant in our land or our national survival were at stake, then perhaps a cyanide bomb. But as long as "fat farms" earn more money than many food-producing farms, there can be only one explanation for cyanide traps—pronounced "Greed!"

These may appear to be the remarks of an "instant expert" on cyanide traps. Seeing

sodium cyanide shot into the face of one's son has that effect. It unbelievably sharpens one's insight and perspective of the relative value of human life versus property loss.

Jack H. Hittson
Rockwall, Texas

This incident should refute claims that the M-44 device poses no threat to humans. This boy truly was lucky, because cyanide can kill even at low dosages.

Despite the urgings of NPCA and other conservation groups, under pressure from sheepgrowers in July 1975, President Ford modified a 1972 ban on the use of predator poisons on public lands to allow the experimental use of sodium cyanide in predator control for a one-year period. On September 29, 1975, acting on applications by the Interior Department and several states including Texas, EPA registered cyanide capsules for use in predator control. Then, on May 28, 1976, the President authorized the operational use of sodium cyanide in federal programs or on federal lands, subject to registration restrictions of EPA and other restrictions. These include prohibitions on the use of the poison in areas where endangered or threatened species of animals might be adversely affected, areas of the National Park System, and certain other wild and recreational areas including "any areas where exposure to the public and family pets is probable." EPA had made the latter restrictions and others in registering the cyanide, but in the case of Mr. Hittson's son obviously the restrictions either were not observed or were insufficient to protect him from cyanide.

Every year increased numbers of Americans use the public lands and large numbers of backpackers penetrate even the most remote areas. There is no way that young people can be protected from these traps as long as they occupy the same lands. Furthermore, this incident is another reminder that the public lands belong to all of us, not just to the few private interests who benefit from the privilege of grazing livestock on them. Many people value coyotes and other wildlife; their interests too must be recognized.

It should be noted that in the years following the 1972 ban, there has been no significant increase in livestock losses.

A Kansas animal damage control plan has demonstrated that the real solution to the decline of the sheep industry is not poisoning, but better animal husbandry. Under this progressive program, sheepmen are conducting profitable operations despite a large number of coyotes. These people practice selective control—removing only individually targeted predators that are actually causing problems rather than poisoning animals that are not livestock killers.

conservation docket

Park Mining: HR 2371—After much delay and under threats of continued strong opposition from its opponents, HR 2371 was reported out of the House Interior and Insular Affairs Committee. The bill would restrict mining in national parks and national monuments and stop all further mining entries. The most notable difference in the House bill is the exclusion of the western portion of Glacier Bay National Monument in Alaska from the provisions of the bill. The legislation had moved slowly in the House while members requested more time for study. The following congressmen were most active on the bill: Rep. John Seiberling (D-Ohio) and Rep. Roy Taylor (D-N.C.), who shepherded the bill through both the Parks and Recreation Subcommittee and the full committee. Those who wished the committee to move slowly included Rep. Don Young (R-Alaska) who succeeded in having mining restrictions in a part of Glacier Bay National Monument removed from the bill, Rep. Jim Santini (D-Nev.), who wants mining to be continued in Death Valley, and Rep. Steve Symms (R-Idaho), who feels all lands should be open to development. Rep. Symms promised to fight the bill each step of the way and to recommend that the President veto it. Full House action is expected sometime this summer.

Alpine Lakes: HR 7792—This bill would designate 383,000 acres of land, including parts of the Wenatchee National Forest in Washington as wilderness. The Alpine Lakes wilderness is part of the Ice Peaks-Enchantment Area which is planned for use for public outdoor recreation and for resource development such as logging, water supply, and water storage projects. The bill passed the House by voice vote. Hearings on Alpine Lakes legislation have been held by the Senate Interior Committee, and further Senate action should follow.

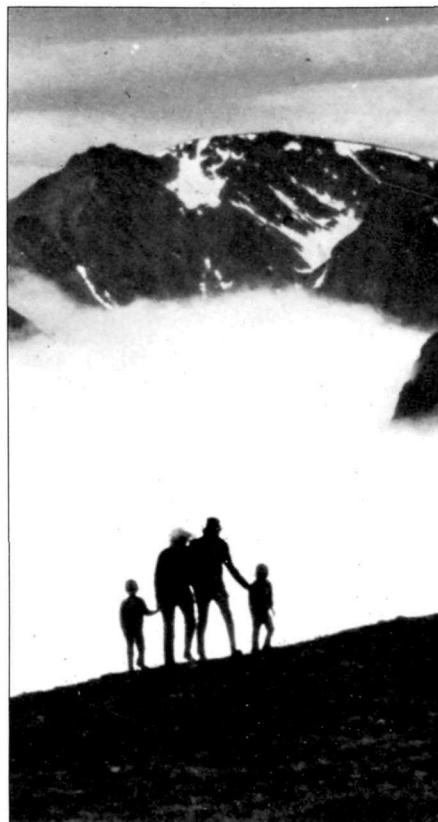
Marine Mammals: HR 13865—This bill was introduced as a result of a court decision that mandated strict enforcement of the Marine Mammal Protection Act of 1972 with regard to killing of porpoises by tuna fishermen.

The bill would permit tuna fishermen to continue current methods of tuna fishing this year and would amend the act to place responsibility for future regulation in the hands of the Secretary of Commerce. The Secretary would have to conduct a study of the status of marine mammal populations to determine whether they were below their "optimum sustainable" population levels. The Secretary would be enabled to permit killing of marine mammals below or with unknown optimum sustainable population levels. Rep. Robert L. Leggett (D-Calif.), who authored the bill, said later that he thought it was too weak and introduced some amendments to the bill in the Subcommittee on Fisheries, Wildlife, and the Environment. Some of these were accepted. The accepted amendments would do the following: retain the goals in the original act of attaining zero mortality and serious injury; make mandatory the program of having observers on all fishing vessels of 400 tons or more in size; assess the fishermen costs of food and lodging for all official observers who are on board ship as a condition of granting the fishermen permits under the Marine Mammal Protection Act. At press time, the full House

Committee on Merchant Marines and Fisheries was expected to act on the bill soon.

Valley Forge: HR 5621; S 1776—Bills making Valley Forge State Park in Pennsylvania a national historical park passed both the House and Senate in time for a planned visit by the President on July 4th. The bills included provisions for acquisition of several inholdings along with the land being donated by the state. Chesterbrook, an adjacent area of historic significance and the only undeveloped parcel of land around the park, was not included in either bill. Sen. Hugh Scott (R-Pa.) thought that including Chesterbrook would be too controversial and would prevent designation of the park by his July 4th deadline. Rep. Richard Schulze (R-Pa.) said that he would continue to work for inclusion of Chesterbrook. The House vote on the bill was 364 to 4 and the Senate vote on the bill was 73 to 10.

Tule Elk: H.J. Res. 738; S.J. Res. 20—These bills would provide habitat for at least 2,000 tule elk in the Owens Valley of California. The bills would provide for cooperation of state, local, and federal governments in providing land for protection of the tule elk. The



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Senate bill would establish a wildlife refuge under the jurisdiction of the Bureau of Land Management. It would also provide for federal-state agreements to provide additional habitats in California to support the tule elk herd. The House bill would instruct the secretaries of Defense, Agriculture, and

Interior to make land under their jurisdictions available for tule elk habitat and would provide for federal assistance in state planning for protection of the tule elk. Congress would receive an annual progress report on the status of the plan. H.J. Res. 738 was approved unanimously by the House and hear-

ings were held by the Senate Commerce Committee in mid-June. It is possible that further Senate action may take place this month. Sen. Alan Cranston (D-Calif.) is the author of the bill and Sen. John V. Tunney (D-Calif.) is a sponsor and a member of the Commerce Committee.

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Continued from page 2

ships are formed here and there to struggle with strip mining, dam building, atomic disposal, the SST, pesticides, or what-have-you. You may look for them a year or two later, and find them not, nor even the memory of them. The conservation movement should pull itself together.

AND WHAT of all of us as individuals, as citizens, as Americans? We have been living through a dreary period since the great rebellions against racial discrimination, against Vietnam, and since the Earth Day explosions against environmental degradation. We surrendered without a struggle to the OPEC holdup, because our sacred automobiles were at stake. For a moment we thought to do better and slowed our driving speeds, thus saving many lives a year, and for a while we were going to buy smaller cars; but we are back with the habit again, and the market for gas-guzzlers is great, and we have hardly noticed the doubling in the price of gasoline.

A changeover to nonpolluting sources of energy is obviously necessary—from oil to coal to begin with for the sake of some small measure of independence, but then to clean energy. Increasingly it becomes apparent that nuclear power is not the solution. The stack and outfall emissions are the smallest part of the problem; the danger of meltdowns, and even of explosions, must be recognized for what it is and denounced as unacceptable; and it verges on the criminal to be planning to store the long-lived radioactive wastes permanently in salt beds, as we are now about to do.

WE HAVE ALLOWED ourselves to be beguiled by the notion of energy sufficiency as a nation. There is no such thing as complete economic independence for any nation, least of all the countries which have accustomed themselves to a high standard of living in terms of commodities, which will draw for a long time on the rest of the world for metal ores and fuel. The name of the game is planetary economics from now on, as it has been for a long time, with interdependence and cooperation, not autarchy and a fanciful independence. And yet, what with economy and solar and aeolian power, we might just come fairly close to energy independence. Who knows?

The investments planned for R&D in solar and wind energy must be stepped up sharply; they are

trivial in comparison with the importance of the knowledge we need. The present indications are that a high technology solar energy system making use of deserts and hydrolysis into hydrogen, or the production of methane, for storage and stabilization, might well cost less in capital investment than nuclear energy. The same may well be true for wind power generated by large batteries of giant windmills with 200- or 300-foot blades, situated perhaps in high wind areas like the northwestern Atlantic or the Great Plains.

NO DOUBT we need special protection for the high-quality air regions of the nation. We at NPCA have fought for that kind of protection for the national parks. Leaving designations to the park superintendents was unfair; it had to be done at the EPA level. We are not surprised that EPA thinks that leaving it to them is unfair, that it should be done at the congressional level. But in the long run, the continent being a unity, it will be difficult to protect any given region until the nation as a whole demands fresh air everywhere within its boundaries.

The sins we commit against ourselves at home are visited on our neighbors across the seas, and theirs upon us. We still load lead into the oceans from our automobile exhausts. India still loads DDT from its farms into its rivers, and hence to the oceans, and into its atmosphere and hence into its rains, and hence again into the seas. And pollution spreads in the oceans in a deadly variety of forms, and enters the food resources which are the sustenance of men.

THE THING to do with air pollution is to get back to stopping it. Instead of stretching out the time to meet the goals, we should be shortening the time. Instead of lightening up on emissions, we should be tightening up. Instead of tolerating semiasphyxiation in our cities and on our highways, we should be in rebellion against the mismanagement by industry and government which permits it.

We should get going with a coalition of far-sighted industrial management, imaginative labor leadership, vigorous farm organizations, outspoken consumer cooperatives, and a conservation and environmental movement worthy of its responsibilities, toward the complete purification of the air we breathe.

—Anthony Wayne Smith



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