



The giant redwood at left, grown in a thousand years, was felled in two hours.

A noted conservationist warns that nature's heritage is slipping from our grasp.

envy those who first ventured into the vast wildness of this wonderful land of ours. I have often thought that man's most exciting journey would have been the first crossing of the Appalachians, or travel with Lewis and Clark, who, at the turn of last century, went up the Missouri from St. Louis and headed West over a trackless continent to the Pacific Ocean at Astoria, Oregon. Those would be more telling experiences than a trip into outer space, for they would be journeys into man's own domain.

The hardwood forests of the East with their flowering shrubs then, as now, were unequaled in the world for their variety of species and for colorations both spring and fall. The prairie grasses of the West stood six feet high; green rolling hills had blue snow-flecked mountains as a backdrop; pure, clear, free-flowing streams were unmarred by dams or sewage-disposal plants; the wilderness bowl was unbroken. The turf had been pounded by animals' hoofs for centuries on end, and still the land was not overgrazed. Dust storms, stirred up by man's contrivances, were yet to come. Forests stood in splendor—ponderosa pine, Douglas fir, Sequoias, Sitka spruce—some so large in girth that 20 men holding hands could not encircle one.

The sacking of the woodlands by predatory man was still decades away. At every height of land wilderness extended to the horizon, beckoning man onward, transforming meadow after meadow into homesites. The abundance of game and fish, the surplus of water, the supply of raw materials, the beauty and serenity of the scene made America from the Appalachians on Westward the land that man would rather possess than any in the world.

There are few places in America where those experiences can be duplicated today. America is so interlaced with highways that it is difficult, even in the Pacific Northwest, to get 10 miles from a road.

There are, of course, roadless (wilderness) areas in the National Forests. The Bob Marshall Wilderness in Montana is such a place. The National Parks, in spite of their "development" as tourist attractions, still have large back country. But they are mostly alcoves—hardly large enough for the present population and woefully inadequate for three times the present number that, according to the Laurance Rockefeller report, will use them in the 21st century.

The one place in America where the immense expanse and solitude of the original wilderness can still be seen and felt is in Alaska. There the Brooks Range stands several hundred miles beyond road's end. The forests thin out into slender fingers of white spruce; the tundra rolls on and on like a prairie, to a distant horizon. One who watches from a height with binoculars will be rewarded

## AMERICA'S VANISHING WILDERNESS

by William O. Douglas
Associate Justice of the U.S. Supreme Court



 $A \ wildlife \ paradise, the \ Great \ Dismal \ Swamp \ that \ once \ covered \ 2,000 \ square \ miles \ in \ southern \ Virginia \ and \ North \ Carolina \ has \ now \ shrunk \ to \ 750 \ square \ miles.$ 

before day is done by stirring sightsfast-stepping herds of caribou: a magnificent wolf in a graceful lope; an occasional grizzly bear dozing on a sunny hillside; Dall sheep high on the pinnacles; a wolverine slinking through willow lining a river bottom; golden eagles and many other kinds of birds. There is no habitation of man anywhere to be seen This is untamed wilderness with no mark of civilization and none of its debris. The solitude is deep and immense. Some who see and feel the vastness of this wilderness get a sense of fulfillment; others have only fear; still others, an urge to "civilize" the wilderness and exploit it.

The question is, how long will Alaska stay untamed and wild?

Getting rid of the wilderness was part of the leveling of the frontier. The buildozer became the symbol of our power. If our other experiences along the wilderness frontier are followed, Alaska's rivers will soon be harnessed by industry and her "resources" tapped by "civilization."

Trees are important for their cellulose, and we need managed forests for lumber and other products.

Waterways are useful for disposition of sewage effluent, and for generation of electric power.

A mountain fastness may have to be invaded for an ore vital to our economy. Valleys and grasslands must be developed to accommodate our steadily growing population.

But the planning for wilderness is as essential as planning for parks and shade trees in our urban centers. While we made some plans for wilderness, we did not start acting until this century was well under way; and our plans were woefully inadequate.

Conservationists who wanted to reserve large areas were opposed by special interests in logging, mining and stock-raising who even to this day often see nothing but dollar signs on our resources. The result was a series of compromises, reserving wilderness areas in National Forests and in National Parks that are inadequate today, let alone for the 21st century. Population has multiplied beyond expectations; automation has increased our leisure time; the work week promises to get shorter; the machines will be slaves of the new society, with everyone having more time on his hands for development of his interests and talents. Sports stadia, tennis courts, swimming pools, picnic grounds-the demand for these is increasing. Wilderness demand is also increasing-a longing for roadless sanctuaries where people can enjoy the primeval glories that once were America.

As we pile up in apartments and work in ant-hill office buildings and have the roar of subways, autos and trains in our ears day after day, we need wilderness for release from the tensions of life.

The wilderness is the only area—the ocean apart—where one can escape the noise, din and smoke of civilization. A boy or girl should have the opportunity to grow up in the Daniel Boone, Thoreau or Muir tradition—learning about survival in the woods, ridding the mind of fear, filling the heart with affection for all the mysteries of the forests, acquiring reverence, wonder and awe for all the handiwork of the Creator. Here a person can come to an understanding basis with the earth and all its creatures.

Running fast-water rivers, or exploring chains of lakes by canoe, hiking ridges, scaling cliffs, traversing a glacier with the aid of ice axes, foraging for food in alpine busins—these are ways for building character; and they are vital in the American saga. Some will not want these adventures. But the opportunities should be left for those great-great-grandsons of ours who do turn their faces to the peaks rather than to the playgrounds.

If one looks down on a map of this continent and visualizes existing threats to our wilderness as fires, he will see blazes everywhere.

Our free-flowing rivers have been largely ruined by sewage and industrial waste. A river is a "treasure." Mr. Justice Holmes once said. But we have despoiled them. The pure, clear, freeflowing stream of the 18th century has not entirely disappeared; a few are left, such as the Current in Missouri, the Middle Fork of the Salmon in Idaho and the Allagash in Maine. But sewage and industrial waste have seriously polluted most of them. The Potomac in the environs of Washington, D. C., where John Quincy Adams and his family liked to swim, is now a cesspool. giving off nauseating odors on hot, humid days. Towns up and down the Potomac have sewage-disposal plants, but none is large enough to handle the present volume of use; all were built to serve smaller communities than the years have produced. As a consequence, raw sewage enters the river. The same story is true across the land, many rivers being so polluted they have zero oxygen, which means that not even trash fish can survive.

ven though all raw sewage is kept from a waterway, the sewage effluent may in time kill the river as a recreational utility. The effluent contains some of the original contaminants as well as dissolved nutrients in the form of introgen and phosphorous compounds, which in turn tend to promote excessive algae growth and an eventual loss of dissolved oxygen. When the effluent comes in small quantities, life in the river may flourish. But the halance is a delicate one, and the effect of sewage

effluent is cumulative. Detergents add to the problem. "Hard" detergents do not break down in sewage-disposal plants but emerge as foam on the water. They even enter percolating waters and artesian wells, and penetrate municipal water supplies. "Soft" detergents have been promised by the industry for 1965. Meanwhile the "hard" ones add to our water problem.

The processes for distillation of salt water and brackish water are adoptable to eliminate all contaminants and nutrients from sewage effluent, returning pure water to the river and pumping the residue to some distant point where it will not pollute drinking water. One or more of these plants would help to clear the Potomac.

Old attitudes are hard to change. But when Castro cut our sweet-water lines to the Guantánamo base, we put up a distillation plant to convert sea water to sweet water. The dollar cost vastly exceeded the cost of resuming relations with Castro. But the added cost was properly deemed irrelevant.

When it comes to the Potomac, the Corps of Engineers takes quite a different stance. They propose a huge dam at Seneca. Md., that will make a muddy, ugly water hole out of many miles of the river, for the impoundment will fluctuate some 30 feet. And the chief purpose of the dam is to supply a head of water for flushing the river of sewage. The installation of a coal-fired distillation plant for sewage effluent would cost less than the dam, while the operating costs for water purification would probably be greater. Yet what price a pure, freeflowing Potomac? What price a stream with fast canoe waters, hundreds of swimming holes, picnic grounds washed by clean water? What price a river toward which the people turn their faces, not their backs?

Most of our rivers have been drafted into service of the country-if not for sewage effluent, then for power, industrial and municipal water needs, navigation and irrigation. While those uses are essential, there is another use long overlooked-recreation. Rivers offer that opportunity; and, when available, hundreds of thousands make use of the service. Today a joint study team named by Secretary of Agriculture Freeman and Secretary of the Interior Udall, and headed by Edward C. Crafts of the Bureau of Outdoor Recreation, is surveying the free-flowing rivers we have left in an effort to establish a system of "wild rivers" to be set aside and protected for all time in their natural state. These include the Allagash in Maine; the upper Hudson in New York; the North Branch of the Susquehanna in New York and Pennsylvania; the Clear Fork and New River, in Kentucky and Tennessee; the Savannah headwaters in North Carolina, South Carolina and Georgia; the Suwannee in

Florida and Georgia; the Buffalo in Arkansas; the Current and Eleven Point in Missouri; and the St. Croix and Namekagon in Wisconsin and Minnesota.

Further west are the Niobrara in Nebraska; the upper Missouri in Montana; the upper Rio Grande in New Mexico; the Green in Wyoming; the Klamath and the Middle Fork of the Feather in California; the Rogue in Oregon; the Skagit, and its Sauk and Suitattle tributaries, in Washington; three forks of the Flathead in Montana; the Salmon and the Selway Fork of the Clearwater in Idaho.

These are streams that should be guarded from all intrusions—including the building of dams—so that those who live here in the 21st century can enjoy float, cance or boat trips for a day or more without seeing too many other people. Visitors will be able to hike, fish and camp alongside them and selfish and camp alongside them and selfish and that civilization exists within a hundred miles, although in truth the nearest town or sawmill or farm may be barely out of sight over the bank.

Some of our lakes need as drastic a cleaning as the Potomac River. Lake Erie is one—a lake whose shores have been despoiled by Cleveland. Our seashores also need protection.

The Cape Cod Seashore National Park, established in 1961, has within its borders many private homes. It preserves the remaining underdeveloped acres in perpetuity, preventing uses which might make the area a slum come the 21st century. We must do the same in other areas.

The incomparable Indiana Dunes have been threatened with appropriation for industrial use. They must somehow be preserved for those whose playgrounds have now been mostly paved.

The Oregon Dunes are another pressing example; they, too, should be set aside as a National Seashore before their character is lost in the developments that seem to come almost overnight.

At one time most of the beaches in California were in private ownership. The American people owned the edge of the ocean, so to speak, but they had no access to it. The State of California several years ago started acquiring it by purchase or condemnation. By the end of 1963 about one third of the shoreline was back in public ownership, but the price had jumped to \$1,600 a foot or \$133-plus an inch. (Some Lake Tahoe beach frontage sells for \$2,000 a foot or \$166 an inch.) Point Reyes in California was acquired as a National Seashore in 1962 As one travels the Pacific beaches north from San Diego to the Juan de Fuca Strait, he finds that most have been invaded by roads, billboards, hot-dog stands and other marks of "civilization.

Individual homes and indeed whole communities cling to highlands above the beaches; shops and filling stations

"What price a pure Potomac?

What price a clean, free-flowing river, toward which the people turn their faces instead of their backs?"

are everywhere. There are in that long stretch only some 30 miles of primitive beaches-primitive in the sense that no roads touch them, no structure is on them or overlooks them. These beaches lie between Cape Alava in Washington south to the Quillayute River near Lapush. The land east of those beaches was logged over some years ago and now is second-growth, showing windblown Sitka spruce along the escarpment above the beaches. Red alder grows in varied stances closer to the high-tide marks; they lean seaward to form an umbrella over corners of these beaches. At dawn, deer and their fawns can be seen on the ocean's edge, looking for seaweeds. Elk keep in the spruce higher up. But their tracks are also found where sweet-water streams pour through alder and bracken to the ocean. The howl of a coyote is common at night; the tracks of cougar are a reminder that one of our most skillful hunters is abroad; fresh tracks in the morning show that raccoons and skunks, who enjoy shellfish, have been abroad. Bright days are idyllic in this bit of heaven on earth; in the shade of alder one is carried far away in reveries as he listens to the soft murmur of the Pacific. On foggy mornings the headlands become distorted and ghostly. When the storms mount and angry waves pound the shoreline, a sheltered retreat in the spruce makes one a witness to an inspiring primordial force that in a matter of seconds can move tons of earth and rock,

hough this stretch of the beach is in the Olympic National Park and though its value lies in its primitive nature, there are eager commercial interests who want to "improve" these beaches by bringing access roads down to them or along them. This proposal had some backing within the National Park Service in the late '50's. Seventy of us put on a three-day protest hike down that 35-mile stretch of the beach. Opinion crystallized against the road. But in 1964 another hike will be held, as commercial interests working with the Bureau of Public Roads have again proposed roads along and into these seashore sanctuaries.

The threat to the Everglades—perhaps our most nearly unique national park—is also continuous and immediate. That problem starts and ends with freshwater that keeps the saw grass green, the water holes filled, and so maintains all the life of the Everglades region, from the tiny mosquito-eating Gambusia fish to the alligators. More than that, fresh water pouring south holds back the salt water that always threatens to invade.

A reservoir system that releases water gradually is one secret of the maintenance of the Everglades as a river of grass teeming with life. The rock underlying the Everglades is another. Though called Miami limestone, its technical name is colitic limestone, because it resembles partially fused fish eggs. Lumpy, permeable and soft, it is filled with holes, some small, some as big as one's fist, some as large as a washtub. These holes hook up into a vast underground waterway.

Its chief characteristic, important to the ecology of the Everglades, is that it lies only a few feet above sea level and has low rims on the east and west, giving it the shape of a spoon. The Everglades is, indeed, like fresh water in a spoon that is pressed down into a sea of salt water. The margin between fresh and salt is narrow. Once that low rim is broken, the salt water comes in. Man has tampered dangerously with this delicate balance.

The Everglades National Park, embracing 1,529,000 acres of land and water, was established in 1947, just in the nick of time. The race was on to restore the balance between fresh and salt water. The result was the creation of conservation areas north of the Everglades Park that fed into the southern part the necessary fresh water.

But the drainage continues today this time under the aegis of an agency known as the Central and Southern Florida Flood Control District, 80 percent of whose costs are paid by the Federal Government. This drainage is not only for flood control but also for reclaiming lands, once flooded periodically, for agricultural purposes.

The flow of fresh water from the north has been so reduced that the ocean has taken over most of the coastal streams. It has driven the alligators, who enjoy only fresh water, way upstream. The otter, a fresh-water animal, has also been driven far inland.

The growth of population and the expansion of industry to the east carry threats to the very existence of the Everglades. Drainage today is threatening water birds and waders. As sloughs and pools dry up or recede, competition for food increases and some birds disappear. Drainage is slowly changing the face of the Everglades. As the sweet-water level is lowered, exotics come in-willow, holly and wax myrtle. A casual visitor might not notice their invasion, but methodical studies show that the ecology of the Everglades is subtly changing.

As the Interior Department said in 1948 respecting the Everglades, "The question is not one of too much water but a guaranty that there shall not be too little."

The Everglades is a national property that more than a half million people visit a year—and the sanctuary close to the hearts of people in all the states. We must make plans quickly to preserve the Everglades. Florida will need saline-water conversion plants; the Government tells us they are now economically feasible when run by nuclear energy for the dual

purpose of distillation and electric power. These conversion plants will be needed irrespective of their costs, for values are at stake that can never be measured in dollars—the preservation of sweet-water sanctuaries which make Florida unique among our 50 sovereign states.

Elsewhere in the nation, the views of rivers, bays, rolling hills or ridges are being impaired by "progress." Those views are often wilderness values in a sense. For though close views show intrusions and developments, distant ones give the effect of an untamed wilderness. These views have aesthetic values greater than man can create on an easel or shape with his hands.

Those who know Mount Vernon know how restful to the eye the green hills and purling river are. They are part of the majesty of the historic monument. Mount Vernon would, of course, still have sentimental values even if it were surrounded by smokestacks and factories. But though there is legal power to despoil it in that way, there is a moral precept against it. Our values are not exclusively commercial; they are spiritual and aesthetic as well. So the Potomac community was shocked when the Washington Suburban Sanitary Commission, an all-powerful Maryland agency, decided to locate a sewage-disposal plant opposite Mount Vernon. An aroused public got that decision reversed-by persuasion. But threats of that kind will constantly recur, since our private and public agencies usually have "commercial" standards, not aesthetic ones

Farther up the Potomac, builders planned to erect high-rise apartments near the river front. These structures would have destroyed the serene, peaceful view of a river that makes up a part of the charm of the city. Those intrusions were finally stopped through acquisition by the Federal Government of scenic eagements.

On a recent visit to California I was shocked to see the green, rolling hills that make up the Coast Range being marred by huge towers carrying power lines. Why should not the power be transmitted by buried cables? It would cost more to do it that way. But what about the aesthetic values? Are they not worth enough to be preserved at almost any cost? Ugliness is not an inevitable cost of modernity.

planners are not always a boon and a blessing. Many of them value trees in terms of cellulose, ridges as powerline sites, valleys as sites for dams or highways. Yet enduring values are often realized only by keeping the trees, the ridges and the valleys untouched.

As John Muir once wrote of our coast redwoods:

"Any fool can destroy trees. They cannot run away; and if they could, they would still be destroyed—chased and hunted down as long as fun or a dollar

could be got out of their bark hides, branching horns or magnificent hole backbones. . . . God has cared for these (Sequoias), saved them from drought, disease, avalanches and a thousand straining, leveling tempests and floods; but he cannot save them from fools—only Uncle Sam can do that."

Commercial interests unrestrained by biologists, botanists, ornithologists, artsits and others, who see the spiritual values in the outdoors, can in time convert every acre of America into a moneymaking scheme.

Once Ohio had the finest stand of hardwoods that was to be found in the world. Today they are all gone, except perhaps for an occasional alcove. All the woods in Maine are filled with roads and crisscrossed by highways. The state has only a 20-mile corridor of wilderness left—Baxter State Park—and it was made out of cutover depleted land.

We have leveled the frontier so fast, we have reduced the wilderness at such a great rate, that we have precious few retreats left—apart from Alaska—and even the existing retreats will soon have to be rationed to hikers because the thin soils of our high country cannot take the pounding of an indefinite number of feet.

We have been going at the whole matter piecemeal, fighting rear-guard actions, first at this point and then at another, winning a few battles, only to find that in other critical areas the road has pushed on another few miles until there are very few retreats left.

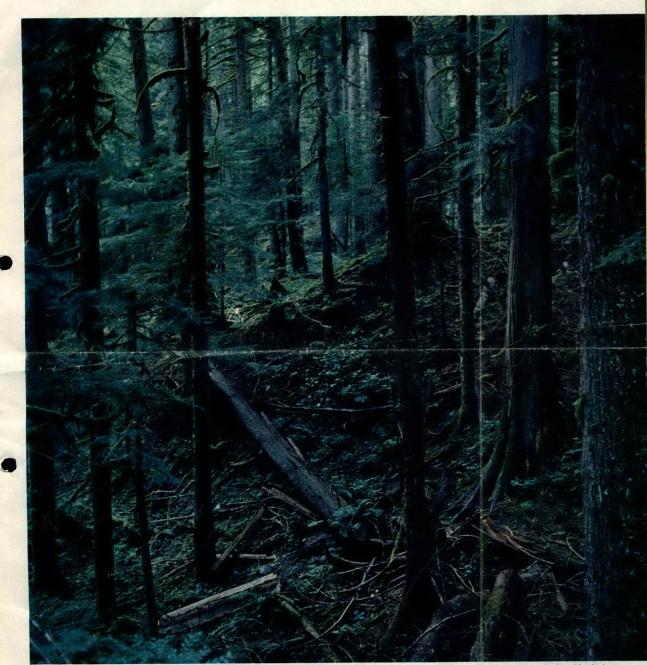
What we need is an overall plan not one that lumps Florida and California together, or the Potomac Valley and Maine, but one that takes a whole region, such as the green hills of California or the Potomac Basin or Florida's Everglades, and drives as deeply into law as can be driven guarantees that precise areas will be kept as wilderness exhibits, now and forever. Grasslands where partridge can thrive even on the outskirts of a metropolitan area must be locked up in perpetuity. Zoning must be used to make not only the cities but also the countryside beautiful and inviting.

Plans to preserve these islands of beauty must be made by constitutional guarantee or otherwise.

Our coast redwoods (Sequoia sempervirens) will soon be museum pieces, though they once stretched in great numbers across this country, and from France to Japan. These trees are the tallest in the world, rising nearly 400 feet. They make a veritable cathedral of wildness where all sounds are muted, where man stands humbly before the Creator. We started with nearly two million acres of these giants. For years they enticed but baffled the loggers, for their size presented difficult problems of felling and transportation. But these problems were solved. (Continued on page 77)

"We need Committees of

Correspondence to coordinate the efforts of diverse groups to preserve the few wilderness alcoves we have left."



The "rain forest" in Olympic National Park, Washington, one of our last remaining stands of virgin timber, once extended from Alaska to Cape Mendocino.

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