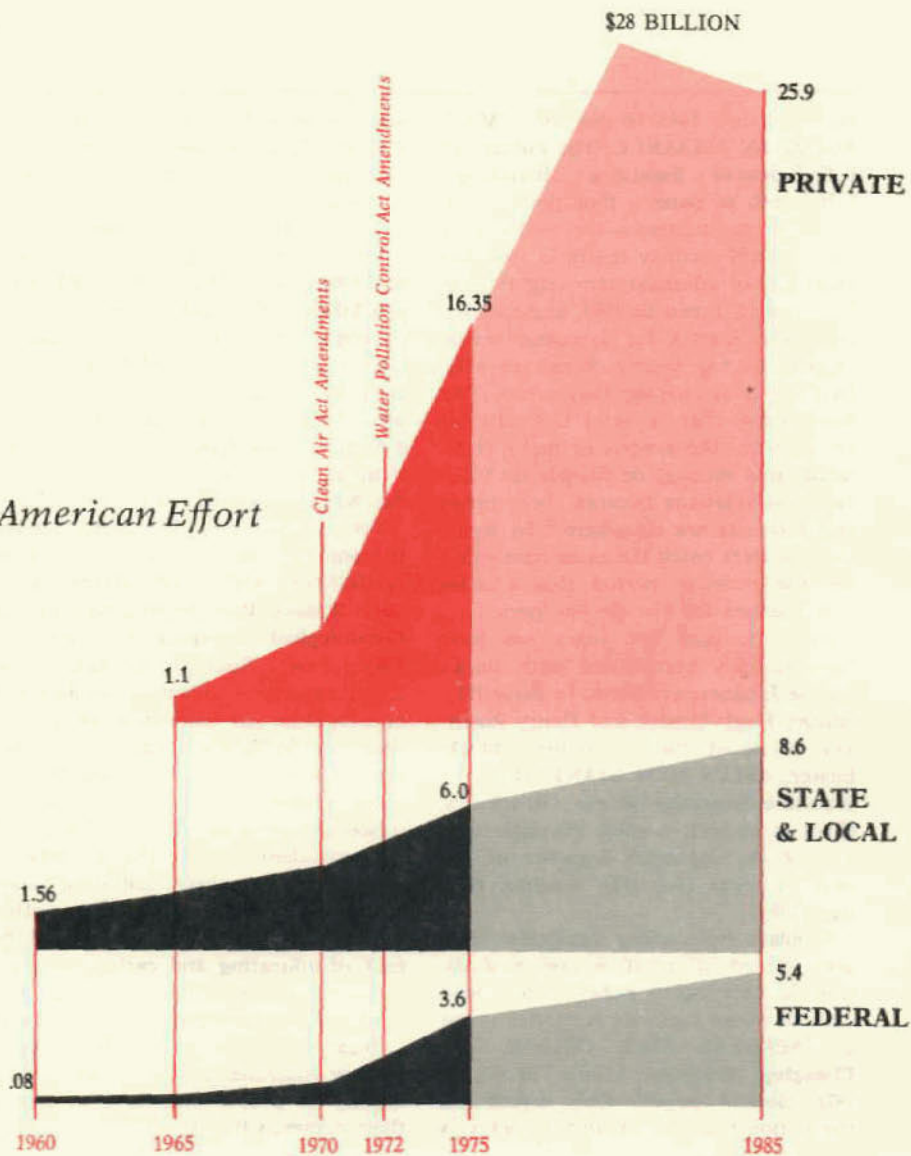


The American Effort



Total 25-Year Pollution Control and Abatement Expenditures: \$120 Billion

Private spending includes capital investment and operating and maintenance costs of pollution control equipment, as well as added individual costs of auto emission control devices. State and local spending includes all expenditures generated by state and local governments for air and water pollution control and solid waste treatment. Grants to states and municipalities are included in federal spending. (Pre-1975 outlays are in current dollars, 1975-85 projections are in 1975 dollars.)

Source: Estimates of the Council on Environmental Quality.



The Environment

From colonial times to the present, Americans have variously viewed their natural surroundings with greed, ignorance, and Thoreau-like sensitivity. The early Western trappers who learned to live with nature, for example, were followed by buffalo hunters who wasted more than they took. But the record shows an abiding, if somewhat erratic, public concern for the well-being of the American environment. Since 1970, the country has been engaged in an unprecedented effort to clean up its air and water, as the chart indicates. And of late, there has been a revival of the turn-of-the-century notion that natural resources are not limitless. Here, conservationist J. Clarence Davies III sketches the historical antecedents of the present environmental movement, and former EPA administrator Russell Train focuses on recent problems and progress.



THE GREENING OF AMERICAN POLITICS

by J. Clarence Davies III

The origins of organized environmental politics in the United States go back at least as far as the period just after the Civil War, but isolated events, foreshadowing later environmental concerns, go back much further.

As early as 1647, the Massachusetts Bay Colony passed regula-

tions for preventing the pollution of Boston Harbor, and in 1710 the Colony forbade the creation of any "disturbance or incumbrance . . . on or across any river that would operate to stop or obstruct the natural passage of fish . . . without the approbation and allowance first had and obtained from the general sessions of the peace." In 1832, the Hot Springs in Arkansas were set aside by Congress as a national park. Then in 1864, George P. Marsh's *Man and Nature*, revised 10 years later as *The Earth as Modified by Human Action*, laid much of the philosophical groundwork for the modern conservation movement. Appalled by the overgrazing of meadows and the ruthless cutting of forests in his native Vermont, Marsh observed:

The ravages committed by man subvert the relations and destroy the balance which nature had established. . . . The earth is fast becoming an unfit home for its noblest inhabitant, and another era of equal human crime and human improvidence . . . would reduce it to such a condition of impoverished productiveness, of shattered surface, of climatic excess, as to threaten the depravation, barbarism, and perhaps even extinction of the species.

The massive industrialization of America that took place in the decades following the Civil War created conditions that made it impossible to ignore environmental degradation. Cities were covered with a pall of smoke from factories, coal-heated homes, and steam locomotives; rivers became sewers; the threat of waterborne epidemics was constant. The heavy demands of a rapidly growing population resulted in devastation of the countryside by mining and timber cutting.

In the context of man's assault on land, air, and water, the political foundations were laid for the flowering of environmental concern that was to occur at the turn of the century. In 1873, the first major national organization devoted to conservation matters was founded; John Wesley Powell, an ex-army officer—the

J. Clarence Davies III, 39, is executive vice president of the Conservation Foundation in Washington, D.C. Born in New York City, he graduated from Dartmouth (1959) and took his Ph.D. in government at Columbia (1965). He served on the staff of the White House Council on Environmental Quality (1970-73) and was a Fellow at Resources for the Future, Inc. (1973-76) before joining the Conservation Foundation. He is the co-author, with Barbara S. Davies, of The Politics of Pollution (1970, rev. 1975). His article is drawn from a forthcoming book-length study, Setting the National Agenda.

first American to examine the close relationship between land use and water supply in the arid West—and others concerned about forest preservation and land use formed the American Association for the Advancement of Science.*

Parks for the People

During the same period, the passage of several innovative conservation laws showed that environmental matters were already on Washington's agenda. In 1872, Congress established Yellowstone as the first major national park "for the benefit and enjoyment of the people." In 1875, Congress passed a buffalo protection bill, the first measure ever passed by Congress to protect a species of wildlife (President Grant vetoed it because the buffalo hunters were proving more effective than the army in beating back the Plains Indians). In 1891, the first national forest legislation was enacted. It authorized the President to establish forest reserves on federally owned land in the Western states for the purpose of conserving timber and water and to prevent floods.

When Theodore Roosevelt became President in 1901, conservation matters were given high priority. In his second State of the Union Message, he declared that "the forest and water problems are perhaps the most vital internal questions of the United States." During the first years of his Presidency, the landmark Reclamation Act was passed and the first national wildlife refuge created. Roosevelt appointed a Public Lands Commission, which supported federal ownership—not sale—of the public lands; he established an Inland Waterways Commission, which recommended that plans for river and harbor improvements take pollution control into account; and he named Gifford Pinchot, the foremost proponent of scientific forestry and coiner of the term "conservation," as his Secretary of Agriculture.

Throughout Roosevelt's administration (1901-09), conservation proposals came primarily from scientists within the federal government. As historian Samuel Hays wrote in 1959, "Conservation neither arose from a broad popular outcry, nor centered its fire primarily on the private corporation. . . . It is from the vantage point of applied science, rather than of democratic pro-

*Followed by the American Forestry Association (1875); the nucleus of the Audubon Society (1885); Teddy Roosevelt's Boone and Crockett Club, devoted to fighting the slaughter of big game (1888); the Sierra Club (1892); and the American League for Civic Improvement and the Society for the Preservation of Historical and Scenic Spots, both devoted to beautification and preservation (1900).

test, that one must understand the historic role of the conservation movement."* The movement was an elite, intellectual affair, based on the gospel of scientific efficiency.

In 1908, William Howard Taft was elected President, and Roosevelt's vigorous conservation efforts began to encounter strong opposition from Congress, from the new President, and from key federal agencies; any restriction on the further development and exploitation of American resources was resented as improper interference with the "invisible hand of the market." Roosevelt, Pinchot, and the other conservation leaders applied the strategy of "enlarging the arena of conflict." Through speeches, conferences, and the press, they turned to the public for support. The public responded with massive enthusiasm for conservation, and thus a movement that had been largely limited to federal scientists and planners found a broad base of support in the public at large.

To a marked degree, the change from an intellectual to a popular base changed the ideology of the conservation movement. Its more dogmatic supporters in 1908 and 1909 tended to look upon all commercial development as crass materialism. They viewed conservation, in Hays' words, "as an attempt to save resources from use rather than to use them wisely." Thus, what began as an effort to improve economic efficiency became tinged with the enthusiasm of a religious crusade to save America from its materialistic enemies.

Within a few years, the conservation coalition that TR had unleashed splintered apart. Its vague evangelistic ideology and tenuous unity could not sustain the political pressures involved in taking a position on particular projects or in initiating legislation. After 1910, the movement fractured into a variety of narrowly focused groups, and the first stage of the American conservation movement came to an end.

Between 1910 and 1933, conservation was no longer a popular cause, but the movement did not die out altogether. For example, the Oil Pollution Act of 1924 was the first major federal statute to be directed explicitly at the pollution problem. The Act authorized the Secretary of the Army to prescribe regulations for the discharge of oil from vessels "in such quantities, under such conditions, and at such times and places as in his opinion will

*See Samuel P. Hays, *Conservation and the Gospel of Efficiency* (Harvard, 1959). Other major sources used for this article include Stewart L. Udall, *The Quiet Crisis* (Holt, 1963); Leonard B. Dworsky, ed. *Pollution* (Chelsea House, 1971); and Richard A. Cooley and Geoffrey Wandesforde-Smith, *Congress and the Environment* (University of Washington, 1970).

not be deleterious to health or sea food."*

On the organizational front, the major governmental addition was the creation in 1916 of the National Park Service, a result of long and dedicated efforts by John Muir, Frederick Law Olmsted, and other preservationists. (Prior to this time, each of the national park superintendents reported directly to the Secretary of the Interior, who generally paid little heed.) A wide range of private conservation-oriented organizations came into being. In 1919, the National Parks Association was formed. The Izaak Walton League was founded in 1922, followed in 1928 by the Federation of Sewage Works Associations, later to become the Water Pollution Control Federation. The gains made under TR were consolidated during the 1920s. Neither the White House nor the general public showed much interest in conservation, and defense of the earlier legacy was left to Congress.

In 1933, with the coming of the New Deal, conservation was again caught up in a broader movement with popular roots, tied to a general policy of federal intervention. Franklin Roosevelt, like TR, took a personal interest in the subject and in fact learned much from the same teacher, Gifford Pinchot. Historian Arthur Schlesinger, Jr., in discussing the origins of what was to become the New Deal, observed that "the central theme in Roosevelt's emerging philosophy was the conservation of natural resources." An interesting insight is contained in a 1937 presidential memorandum to Aubrey Williams, acting administrator of the Works Progress Administration. FDR wrote from Hyde Park:

I realize that sewer projects are useful but I think we should adhere strictly to my memorandum of August twenty-first, directing that no future WPA projects shall be approved for improving, repairing or adding to sewers which dump [directly] into any creek or river. The only modification, or, to be more accurate, interpretation, of this order would be in a case where the sewer project has nothing to do with the ultimate disposal of sewage. . . . In order to be absolutely on the safe side in these cases, I wish you would submit to me any projects which seem to come within the above interpretation.

*Congress also extended the forest preserve system to the entire United States (1911). The Public Health Service Act was amended to authorize surveys and investigations of water pollution (1912), and the 1913 Annual Report of the Public Health Service recommended federal control over pollution of interstate waters. A law was enacted providing for the establishment of migratory bird refuges (1913). In 1920, the Federal Water Power Act and the Mineral Leasing Act established national policy in two areas vital to conservation interests. These were followed in 1924 by the Clarke-McNary Act, which extended the national forest system still further.

With White House support, major progress was made on many fronts between 1933 and 1939. The Civilian Conservation Corps, the Tennessee Valley Authority, the Soil Conservation Service, and the Fish and Wildlife Service were established. Congress passed, and FDR signed, the first Fish and Wildlife Coordination Act, the Taylor Grazing Act, the Historic Sites Act, and the Pittman-Robertson Act providing federal funds for state wildlife projects. Twice Congress approved a federal water pollution control bill, but in 1938 it was vetoed by Roosevelt because of a dispute over budget procedures; in 1940 the House and Senate were unable to reconcile their versions of the bill. The Public Works Administration and its successor agencies built \$325 million worth of sewage treatment projects across the nation. In 1935, the WPA organized an air pollution survey of New York City, and the following year the Public Health Service began a similar survey in 14 major cities.

The Killer Smogs

New Deal conservation efforts were cut short by World War II. But the immediate postwar years were marked by increased scientific and public concern over air and water pollution, which was to become the leading concern during the subsequent, or third, stage of the environmental movement. In 1947, California passed the first modern air pollution legislation to deal with the smog problem in Los Angeles (although it was not discovered until the early 1950s that the automobile was the chief cause of the problem). An air pollution episode in Donora, Pennsylvania, the following year, which killed 20 people and made several thousand sick, brought an outcry that led eventually to passage of the first federal air pollution law in 1955. The law gave the Public Health Service authority to do research on air pollution and to conduct demonstrations and training. The first federal statute designed to deal with the overall water pollution problem was signed in 1948 and strengthened in 1956. It provided for federal subsidies to build local sewage-treatment plants and allowed limited federal moves to control pollution in interstate waters.

The postwar years also brought a new environmental threat—radiation. Radioactive fallout from the testing of Soviet and American nuclear weapons became a major concern of the general public in the early 1950s. Headlines such as “Strontium-90 in Babies’ Milk” stirred the scientific community into political action. Just as scientists formed the nucleus of Teddy Roosevelt’s conservation movement, so scientists, aroused by the nuclear

hazard, played a major role in the new conservation. Barry Commoner, referring to the impact on scientists of the fallout controversy in 1953 and 1954, wrote, "For many of us, the meaning of the environment and its importance to human life was suddenly brought to light." Another ecologist, Grahame J. C. Smith, noted, "Radioactive material was the first pollutant to be properly monitored and the first to show clearly the worldwide distribution and effects of a pollutant released at one point. It was this pollutant that alerted us to the dangers inherent in our treatment of the Earth."

Nuclear fallout dramatized the impact of man's environmentally disruptive actions on man. The controversy over pesticides, in particular DDT, dramatized their effects on nonhuman life. Research findings during the late 1950s showed that pesticide residues were pervasive in the environment and that their effects on wildlife could be extremely damaging. Supreme Court Justice William O. Douglas observed in 1961, "There is growing fear that due to DDT and other pesticides we will witness in a few years a greater extermination of animal life than man has known in all his previous centuries on earth." A year later, Rachel Carson's *Silent Spring* vividly conveyed the same message to a wide audience and helped to trigger a continuing series of governmental curbs on pesticides.

Renewing the Conservation Ethic

With John F. Kennedy's election in 1960, conservation problems again received extensive federal attention. In 1961, Kennedy sent to Congress a special message on natural resources, followed by a special message on conservation in 1962. In May 1962, the White House held a National Conference on Conservation. The emphasis in these efforts was on traditional conservation matters, such as proper development of water and timber resources, the public lands, electric power, and recreation. Pollution control was not yet a major issue in Washington.

Lyndon Johnson was even more committed to the conservation cause than Kennedy. As in other policy areas, Johnson in his first year in office pushed through Congress many of the conservation measures advocated by his predecessor: the Multiple Use Act of 1964, the Land and Water Conservation Fund Act, and the law establishing a National Wilderness Preservation System. Typically, Johnson went much further. Each year after 1964, he sent to Congress new broad proposals. Lady Bird Johnson supplemented her husband's efforts by publicizing a cam-

**INDEX OF PUBLIC ATTENTION TO AIR AND WATER POLLUTION,
1963-73***

	'63	'64	'65	'66	'67	'68	'69	'70	'71	'72	'73
Air pollution	125	128	244	394	552	194	297	819	559	456	779
Water pollution	119	121	265	239	240	166	472	966	828	706	511
Combined	244	249	509	633	792	360	769	1785	1387	1162	1290

Public attention to air and water pollution peaked in 1970, the year of Earth Day and the Nixon administration's major environmental initiatives, and has since subsided to a moderately high level.

paign for "natural beauty," and Stewart Udall, as Secretary of the Interior, gave eloquent voice to the conservation ethic.

The Congress generally supported the President's efforts; a group of Democrats, notably Senators Edmund Muskie and Henry Jackson, began to assume greater prominence as independent advocates in the media and in Congress itself. In 1965, the Water Pollution Control Act was strengthened, and the Clean Air Act was extended to cover automobile emissions. Congress passed the Highway Beautification Act and the Federal Water Project Recreation Act. In 1966, the Clean Water Restoration Act was signed by Mr. Johnson—who, optimistically, promised to clean up the Potomac in 10 years—and an air pollution scare in New York City spurred further strengthening of the Clean Air Act. The movement for wilderness preservation reached its peak in the so-called "conservation Congress" of 1968, which created the North Cascades and Redwoods National Parks, halted plans to dam the Grand Canyon, and established a Wild and Scenic Rivers System and a National Trails System.

These actions in Washington were accompanied by a massive increase in public concern with environmental matters. The membership of the Sierra Club almost tripled to 90,000 between 1965 and 1969, and other private environmental groups registered

*Mr. Davies' index, which roughly measures the degree to which a problem rates as a political "issue," is derived from the sum of five *weighted* components: (1) the number of articles and editorials in the *New York Times* dealing with the issue; (2) mention of the issue in the Republican and Democratic Party platforms; (3) passage of relevant major legislation by state legislatures; (4) mention of the issue in the annual policy statement of five major interest groups (e.g., the AFL-CIO); and (5) mention of the issue in the annual policy statements of four major environmental groups (e.g., the Sierra Club).

large gains in membership. Press coverage also increased. The number of environment-oriented articles in major periodicals increased from 68 in the 1957-59 period to 226 in the 1967-69 period. The number of articles in the *New York Times* concerned with the effects of pollution rose from 101 in 1960 to 492 in 1969. National opinion polls revealed that 35 percent of the citizens in 1965 considered water pollution a "very serious" or "somewhat serious" problem. By 1968, this figure had jumped to 58 percent. The comparable poll figures for air pollution were 28 percent in 1965 and 55 percent in 1968.

In 1968, media interest in environmental problems flagged, and some observers thought that the great boom was over. Richard Cooley and Geoffrey Wandesforde-Smith, two specialists on environmental politics, wrote in 1969:

There is some indication that the close of the Ninetieth Congress late in 1968 may mark the end of this remarkable period in the history of conservation politics. . . . Some members of Congress, as well as of the new Republican administration, have suggested that we are reaching the end of a long wave of significant and highly visible progress, and that the widely hailed "environmental crisis" has, in a certain sense, passed the peak of critical national interest and public concern.

In fact, 1968 marked the transition from the "old" to the "new" conservation, from the New Deal stage to the '70s stage of the movement. The new conservation stressed protection of the environment, primarily through pollution control, with industry as a prime target, as contrasted with the narrower traditional emphasis on wilderness preservation, erosion control, and recreation.

As during the Teddy Roosevelt period, the change in emphasis also changed the nature of environmental politics. One scholar had this to say about the "old" conservation: "Virtually every major conservation success in our country's history, from the National Park System to the Tennessee Valley Authority to the Soil Conservation Service, has deep roots in what is commonly referred to as pork barrel politics." The old conservation issues were "distributive" issues; they involved the government in subsidizing some segment of American society. The new conservation placed far more emphasis on government regulation, on government control of the behavior of certain groups, in this case, industrial polluters and developers.

AN INDUSTRY VIEW

Robert O. Anderson, chairman of the board and chief executive officer, Atlantic Richfield Company, writing in the magazine Catalyst for Environmental Quality, October 17, 1973:

So we have two problems which, to some, would appear to be in conflict: energy and environment. While technology has been pointed to as the culprit, actually it is our only hope for solving the environmental problem. I agree with the scientist . . . who said, "Technology and ecology are by no means at war; it is merely that they have suddenly discovered each other."

We cannot go back in time to a less productive society, so we must find new ways to use energy and still maintain an acceptable environment. We can do this only if all segments of society work together toward that common goal. The adversary confrontation approach to restructuring public policy will not work, for the situations created by this approach only threaten to sacrifice the welfare and even the well-being of our citizens. . . .

The task ahead of us, as a nation, is to make public choices in a more informed and rational way. This implies trade-offs, compromises and the ability to come to balanced values. It is important that we know where we are going, but it is just as important that we pay attention to the selection of the paths by which we will get there.

The newer environmental demands, particularly in the area of pollution control, had considerable popular appeal, especially to the American middle class. During the autumn of 1969, a number of developments coincided to produce an explosion of environmental interest in 1970. Although doctrinally opposed to "excessive" federal regulation, the Nixon administration decided to place major emphasis on environmental issues—in part, to steal the Democrats' thunder. Senator Muskie, a potential challenger to Nixon in the 1972 election, was preparing amendments to the Clean Air Act; Senator Jackson was shepherding his National Environmental Policy Act through Congress. Senator Gaylord Nelson of Wisconsin and a group of student leaders were making preparations for a nationwide celebration of Earth Day, to be held in April 1970.

On January 1, 1970, Mr. Nixon signaled his administration's new commitment to environmental improvement with the strong statement that accompanied his signing of the National Environ-

mental Policy Act. A few days later he devoted almost one-third of his State of the Union Message to the environment, stating that environmental quality "may well become the major concern of the American people in the decade of the seventies." On February 10, he sent to Congress a special message containing a number of recommendations, including the strengthening of the acts for air and water pollution control. On April 22, Earth Day was celebrated across the nation with an outpouring of public concern. In Washington, D.C., 50,000 people turned out, some to march on the Interior Department, others symbolically to protest beach pollution by throwing oil on the sidewalks. The full tide of environmental law-making crested in 1970-73. The Council on Environmental Quality and the Environmental Protection Agency were created, thus firmly institutionalizing advocacy within the government. In the private sector, yet another wave of environmental organizations came into being; existing environmental groups increased in membership and sophistication, and certain national associations that had previously ignored environmental problems began to devote considerable attention to them. Dramatic changes were made in the laws governing air and water pollution control, pesticides, and occupational health. New issues competed for attention—land use, noise, recycling, growth. The media devoted twice as much time and space to environmental problems as they had prior to 1970.

Declining Political Momentum

However, by 1973, the high cost of environmental improvement became increasingly apparent. Industry opposition to pollution controls stiffened, and the public became increasingly concerned about inflation. The Nixon administration showed less interest in new environmental outlays. Finally, during the Arab oil embargo in the winter of 1973-74, "energy" usurped "environment" as a top federal concern. With the Watergate scandals full-blown in 1974, Mr. Nixon, for the first time in five years, failed to send an environmental message to Capitol Hill. Environmentalists in Congress during 1974 and 1975 spent as much time opposing the weakening of environmental laws as strengthening them. New proposals covering land use, which a year or two earlier had seemed likely to become law, languished and died.

Despite the decline in political momentum, two new laws, passed in late 1976, closed the remaining gaps in the federal government's *authority* to regulate pollution. The Resources Conservation and Recovery Act established a regulatory framework

for land disposal of pollutants comparable to the regulations dealing with air and water pollution. The Toxic Substances Control Act encompassed literally all substances with the exception of those specifically regulated by other acts, such as pesticides, drugs, and nuclear wastes. The regulatory powers given to the government were equally broad, ranging from labeling to the outright ban of certain chemicals.

Despite high unemployment and "energy" problems, public concern and media attention continue to be greater than what they were prior to 1970. Environmental organizations in and outside the government have persisted in their efforts to see that the complex, sometimes controversial antipollution laws enacted in 1970 and 1972 are implemented. Many new issues have appeared with an environmental "connection"; the primary public worry—over the future availability of fuel, food, and other resources—is reminiscent of the first Roosevelt era. In some ways the movement has come full circle, and conservation is once more the top priority of the environmentalists.



THE BEGINNING OF WISDOM

by Russell E. Train

Little more than seven years have passed since zealous young people were burying automobiles to celebrate the first Earth Day. A great deal has happened since then. But how much has really been achieved?

Is our environment better than it was? Are toxic wastes and dirty air any less of a hazard than they were in 1970? There are no simple answers. The beginning of wisdom about environmental problems is an appreciation of their complexity. In fact, we are discovering environmental hazards today—fluorocarbons, heavy metals, asbestos fibers—that were scarcely considered hazards a few years ago.