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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.

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Certainly we are now far better prepared to cope with pollution and other environmental degradations, at least in our own country. The essential institutional framework for protecting ourselves and our children is in place at the federal level. The Council on Environmental Quality is a focal point for White House policy-making, while the Environmental Protection Agency (EPA), created in December 1970, is the strongest experimental-research, standard-setting, and enforcement institution of its kind in the world.

EPA has strongly influenced Japan, Canada, Britain, West Germany, Sweden, and other countries where political leaders have decided to centralize environmental management. All of our own state governments have established agencies to deal with pollution. Some, like California's large, well-staffed Air Resources Board, enforce standards more stringent than those of the federal government; others are still ill-equipped to enforce any standards.

Since 1970, the National Environmental Policy Act has required federal agencies to prepare an environmental impact statement, spelling out all possible adverse environmental consequences, for every major federally funded project—dams, highways, airports, public buildings. This landmark reform, almost revolutionary in its implications, means that federal agencies, for the first time in history, must engage in truly comprehensive decision-making, taking into account a broad range of social and economic factors seldom considered in the past.

The Council on Environmental Quality monitors the Environmental Impact Statement (EIS) process. Thousands of these documents are filed each year routinely. All too often, this procedure, in which experts compile mountains of excessively detailed data, has become a burden. Copies must be available to all interested parties, and it is this public disclosure requirement that provides the operative force behind the EIS process by offering environmental action groups and others an opportunity to scrutinize and challenge controversial projects.

Of course, the EIS process can be abused. It is time-consuming. It has been used to block or delay badly needed low-income housing projects as well as highways of questionable value. Federal employees in Washington, D.C., have even invoked it to avoid moving their offices to an undesirable part of the city.

The Council on Environmental Quality has also served the nation as a drafter and initiator of legislative proposals. In addition, the Council has prompted the issuance of executive orders from the White House, such as President Nixon's order

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banning the use of poisoned bait to kill coyotes on public land—the poisons were killing other species, including the endangered bald eagle.

The performance of the Environmental Protection Agency is less easy to assess but, given its problems, I believe its record is remarkable. Its statutory mandates have been extraordinarily sweeping and complex, and they continue to multiply. Unfortunately, EPA's resources have always lagged behind its responsibilities as legislated by Congress. The Ford administration submitted a request to Capitol Hill for \$802.7 million for fiscal year 1978, only 4 percent (\$28.7 million) above the previous year's appropriation, despite EPA's sharply increased responsibilities under the Toxic Substances Control Act and Resource Conservation and Recovery Act. As EPA administrator, I had recommended an increase of \$350 million, including funds to increase the agency's staff from 9,680 to 12,350. So far, President Carter has proposed a small increase of funds and 600 additional positions.

EPA has almost doubled in size since it was established in 1970 with 5,000 personnel but has had trouble in building up the technical resources it requires. It must try to provide design assistance to more than 8,000 municipalities involved in sewage-treatment construction programs. The agency desperately needs toxicologists to help with the re-registering of some 35,000 pesticide compounds. But industry needs these specialists too (and pays them better) in order to carry out the testing required by the new toxic substances legislation and by the growing number of requirements of the Food and Drug Administration and the Occupational Safety and Health Administration.

Since 1970, Americans have come to expect prompt solutions to pollution problems. Overall, we have made some notable progress, particularly in dealing with air and water pollution. Air quality has been significantly improved in urban areas. Nearly 40 percent fewer people were exposed to unhealthy levels of particulates in 1975 than in 1970. Sulfur oxide levels in urban areas have declined an average of 30 percent since 1970. Some 92 percent of

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major stationary sources of air pollution (e.g., power plants and factories) are in compliance with state regulations or adhering to compliance schedules. Auto pollution levels are down, including hydrocarbons in California, a major source of smog in that state.

### **The Price of Cleanliness**

Nonetheless, we have a long way to go. Sulfur oxide levels threaten to rise again because of shifts from oil to coal. Air quality standards have been achieved in only a minority of the nation's 247 air quality regions. It would appear that many of the goals originally set for 1975 may not be reached for another decade.

With its construction grants for treatment of municipal waste, EPA is now administering the largest public works program in the country. Despite delays, some \$16 billion of federal funds have been obligated to the program, but it will take at least 10 more years and billions of dollars more before satisfactory "secondary treatment" is achieved nationwide. Industry, generally, is well ahead of municipalities in achieving the 1977 targets. However, industry is now mounting a major attack on the "best available technology" (BAT) standards mandated for 1983, claiming that they are both unnecessary and too costly. They are neither. The 1983 requirements should be maintained, especially for toxic effluents.

Although it is impossible to assess the condition of all the nation's waterways at any one time, the best available data show a decline in levels of bacteria and oxygen-absorbing waste but a rise in nitrogen and phosphate contaminants (particularly from agricultural runoff), which encourage algae and other undesirable vegetation. Fish have returned to portions of such major rivers as the Willamette, Detroit, Monongahela, Savannah, Buffalo, and Arkansas. Particularly satisfying has been the reduction in the flow of contaminating phosphorus that had been accelerating the eutrophication of the Great Lakes. Further reductions are needed and new concerns have arisen in the Great Lakes region with the contamination of fish by toxic chemicals, such as PCBs.\*

Passage of the Safe Drinking Water Act of 1974, establishing new purity standards for all states, was a major achievement, but we still know far too little about the potential hazards of toxic

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\*Polychlorinated biphenyls. These exceptionally stable industrial compounds, when lost through vaporization, leaks, or spills, prove more persistent in the environment than DDT. Dangerously high PCB levels have been found in fish, waterfowl, water supplies, cattle, and even in mothers' milk.

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substances in drinking water. New Orleans, for example, draws its water from the Mississippi, which contains minute amounts of carcinogens and other chemical contaminants, some in the parts-per-trillion category. We have inadequate knowledge of the effect on human health of long-term exposure to low levels of such contaminants.

Looking back on the past six or seven years, it is easy to conclude that key environmental legislation was usually too ambitious and too complex for easy and effective administration. Unrealistic deadlines were set. Standards were mandated that could not be met in the time allowed. Vast programs, such as the one for construction of municipal sewage treatment plants, were initiated but not funded. As frustrating as these circumstances often were to those charged with carrying out the legislation, I would not have had it any other way. To have asked only for what was clearly and easily achievable would have brought little progress. By demanding what often seemed impossible, we have, in fact, made remarkable headway.

### **Divergence in Congress**

The fact that the legislation was written by congressional committees with sometimes opposing philosophies has not made EPA's job any easier. Water quality legislation is a case in point: The Senate, in a move spearheaded by Senator Edmund S. Muskie (D-Maine), has stood for stringent regulation, while the House has sought more flexibility.

On occasion, divergent congressional approaches to specific issues in the water pollution legislation, such as user charges, are *both* reflected in the final statute, leaving it to EPA to find a way to implement the law. In 1976 and again this year, congressional consideration of the extent of EPA authority over dredge-and-fill operations in the nation's wetlands reflected a desire by the House to reduce that power, whereas the Senate has tried to sustain it.

Citizens groups, particularly public-interest law firms, have played an immensely important and valuable role, especially by holding EPA's bureaucratic feet to the fire through court action (or threat of court action) in order to force prompt implementation of new statutes. These groups have not hesitated to bring suit when deadlines for pollution control measures were not met by EPA. I imagine that I was the most sued man in government, taking into account legal actions brought by both public-interest

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law firms and by industry. In this regard, one must bear in mind that for every environmental group that believes EPA is moving too slowly or too leniently in a given case, there is a business or farm group, or some other organization, that finds the agency acting too rapidly or too strictly.

Much environmental legislative activity in the 1975-76 Congress was essentially defensive in character. Thus, the extension of EPA's authority to regulate pesticides turned into a fight to prevent Congress from giving the Secretary of Agriculture veto power over the exercise of that authority. The fight was won in the House by an uncomfortably close margin.

Struggles of this kind were perhaps an inevitable consequence of moving from the conceptual to the implementation stage of the environmental effort. Practicing what you preach is often painful. Sewage treatment plans cost taxpayers dollars. Sulfur oxide controls instituted by public utilities often mean higher electricity bills. Pesticide regulation restricts the freedom of the farmer. EPA control over development of valuable wetlands means that some developers, as well as other private property owners, may no longer exploit their land without restriction. The ban on the use of poisons to kill coyotes antagonizes ranchers who claim livestock losses. Mandatory auto-emission control devices added to the cost of cars and created some engine performance problems, at least initially.

### **Matching Costs with Benefits**

In 1970, environmental issues were often viewed simplistically and emotionally; Utopia seemed easy to attain. We have become more sophisticated since then; the energy crisis and economic troubles have led to closer scrutiny of the costs and benefits of environmental proposals. The days of uncritical congressional acceptance of environmental controls are gone.

The continued success of the environmental effort in the United States will depend on three things: first, our ability and willingness to find ways of keeping costs, inequities, and inefficiencies to a minimum and of encouraging constructive reconciliation of environmental, social, and economic goals; second, the effective redirection of the environmental effort to ensure a steady shift from the *control* of pollution to its *prevention*; third, the strength of the general public's commitment to environmental protection.

Several items remain on the agenda of needed legislation, as

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I see it. We need strip mining legislation. We need to enact a bill giving permanent legal status to EPA and providing a more coherent framework for the agency's policies and programs. We should give serious consideration to the creation of a Cabinet-level Department of the Environment, which would include EPA's present authorities and programs as well as appropriate elements now located elsewhere in the federal government, such as the National Oceanic and Atmospheric Administration, the Fish and Wildlife Service, and portions of the Geological Survey, the National Park Service, and perhaps the Coast Guard.

### **Painful Preventive Medicine**

As a society, we must learn to assess every decision, every action in advance to determine the adverse environmental impacts that might result. This means recognizing that manmade environmental hazards are a serious threat to human life and health and that we must practice preventive medicine with respect to the environment. It means recognizing that lasting environmental progress comes not from add-on controls but from basic changes in industrial and automotive processes. Mass conversion to coal, for example, will require billions of dollars for new technology to remove sulfur. But in the longer run, we need clean, renewable sources of energy, such as solar energy.

The greatest successes of EPA so far have come from applying technology to specific sources of emissions and effluents, such as particulate and sulfur oxides from factory smokestacks and liquid industrial waste. Still to be introduced—and far more difficult—are pollution control measures that involve real changes in American lifestyles and land-use patterns, such as urban transportation control plans that affect the ways we use our private autos.

Our reliance on regulatory approaches to pollution has brought positive results, but regulation often carries with it a rigidity of application that can prove counterproductive, particularly as we reach high levels of control. We now need greater flexibility in administration as well as new approaches involving the use of economic charges as a supplement to regulation.

Noncompliance charges for motor vehicle emissions, for sulfur oxide emissions from power plants, and for some point sources\* of water pollution are attractive possibilities as regu-

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\*Point sources are specific sewer outlets, discharge pipes, and the like, in contrast to generalized sources of pollution such as agricultural runoff.

**KEY ENVIRONMENTAL COURT CASES**

**Scenic Hudson Preservation Conference v. Federal Power Commission** (Dec. 1965)

The 2nd Circuit Court held that factors other than economic interest could be the basis for being an "aggrieved" person, thus giving environmental groups legal standing to sue in defense of scenic, historical, and recreational values affected by power development.

**Zabel v. Tabb** (July 1970)

The 5th Circuit Court held that the Army Corps of Engineers was not limited in the issuance of dredge-and-fill permits to considerations of navigation, flood control, and hydroelectric potential but could deny such permits on environmental and ecological grounds.

**Sierra Club v. Morton** (April 1972)

The U.S. Supreme Court held that, once a citizen or group established its direct stake in an environmental decision, the plaintiff could assert the interest of the general public as well. The decision reaffirmed that injury is not limited to economic values but extends to aesthetic and recreational values as well.

**Sierra Club v. Ruckelshaus** (Nov. 1972)

The Circuit Court in Washington, D.C., held that EPA acted in violation of the Clean Air Act in approving state plans that permitted significant deterioration of existing air quality.

**U.S. v. SCRAP** (June 1973)

The U.S. Supreme Court held in class-action environmental suits that, if the alleged harm will affect a small group of people, the plaintiff must be able to prove that he will be one of those affected; but, if the harm affects all citizens, then any citizen may bring suit.

**Scientists' Institute for Public Information v. AEC** (June 1973)

The Circuit Court in Washington, D.C., held that the National Environmental Policy Act (1969) required the preparation of an environmental impact statement, even at the research stage of a federally funded project.

**Kleppe v. Sierra Club** (July 1976)

In what was viewed as a defeat for environmentalists, the U.S. Supreme Court held that since there was no federal plan or program for regional coal development (in the northern Great Plains), no immediate preparation of a regional environmental impact statement was required from the Department of Interior.

**E. I. du Pont de Nemours and Co. v. Train** (Feb. 1977)

The U.S. Supreme Court held that EPA has the authority to establish uniform 1977 and 1983 effluent limits for classes or categories of existing point sources of water pollution, provided that allowances are made for variations in industrial plants.



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latory supplements. Other promising economic approaches could involve a mandatory deposit on throwaway beverage containers and taxes on packaging to create an incentive to reduce this country's growing mountain of solid waste at the source.

Our society places a premium on adversary approaches to problem solving. Citizen action must remain strong. But I also believe that we must curb extreme advocacy and ideological polarization. Businessmen must develop a less paranoid attitude toward environmental protection, and environmental activists must become more sensitive to the real-life concerns of others, particularly when it comes to jobs, economic well-being, and adequate profits.

White House leadership is vital as the conflicts over environmental policy sharpen in the years ahead and regulatory actions really begin to affect commuters, farmers, workers, and small businessmen. Growing population and increased competition for scarce resources are going to produce both greater harmful stress on the environment and more political conflict over environmental programs. Yet, if we are to succeed in maintaining environments that both sustain and enrich human life, we will need—above and beyond all regulatory systems, technologies, ideologies, institutions, and mechanisms—a new ethical awareness of our relationship with our environment and other forms of life.

