LEARNING THE LESSONS

by Robert W. Crandall

"It's one of the greatest success stories in American history," said Russell E. Train, former administrator of the U.S. Environmental Protection Agency (EPA).

Train's enthusiasm in 1976 over the cleanup of the Great Lakes may have been excessive, but it was not wholly unwarranted. In 1965, Lakes Erie, Michigan, and Huron were so polluted that hundreds of beaches were closed. Fish perished in waters choked with algae, and raw sewage washed up on the shores.

Today, Erie's surface is blue again. Lake trout and walleye dart through its waters. Most beaches have reopened. And, while serious difficulties remain—notably, high levels of dangerous PCBs (polychlorinated biphenyls), mercury, lead, and various pesticides in certain areas—most scientists agree that all five of the Great Lakes are healthier than they were 20 years ago.

There are other success stories. The northern tributaries of the Mississippi, such as the Maunesha River—whose waters once swirled with discharges from a sauerkraut and pickle cannery, a cheese factory, and a slaughterhouse—are all cleaner, now that a treatment plant processes the industrial wastes. New York's Hudson River, Virginia and Maryland's Potomac River, and Wisconsin's Fox River were once among the most polluted in the country. But today anglers pull bass, pike, or salmon from the rivers. Twenty miles south of the nation's capital, the Potomac is now clean enough to swim in. Hudson River boaters and water-skiers no longer joke about the health hazards of a fall into the river's murky waters.

In the skies over the Northeast and Northwest, many rare birds that were once nearly extinct because of DDT and other pesticides (e.g., the peregrine falcon, bald eagle, and brown pelican), are now increasing in number. And in New York, Pittsburgh, Chicago, and Denver, city dwellers are literally breathing easier. The number of "unhealthful" days in many cities, according to the EPA, has dropped.

But these successes do not tell the whole story. Overall, the national trends in pollution abatement are not encouraging.

Between 1972 and 1985, U.S. industries spent $395 billion, federal and state governments spent $154 billion, and consumers spent $83 billion (mostly for catalytic converters and other auto-pollution-control devices). Total: $632 billion, to clean up America's air and water, improve solid waste disposal, control the harmful effects of pesticides, and pursue other environmental objectives. But those sizable outlays have

yielded only modest gains [see "Report Card," p. 74]. For example, air quality throughout the United States has improved only marginally. Despite the costly 17-year regulatory effort to control motor vehicle exhaust emissions, photochemical smog is nearly as bad in most places as it was on Earth Day 1970. Nationwide, the average airborne concentration of particulate matter, sulfur dioxide, and carbon monoxide fell by about one-third between 1976 and 1985.

After reviewing the latest research on water pollution in 1986, the U.S. General Accounting Office (GAO) came to the less than glowing conclusion that, overall, "water quality probably improved in particular streams but, in general, the nation's water quality did not significantly change" between 1972 and 1982. According to the U.S. Council on Environmental Quality's report *Environmental Quality* (1984), the "average" U.S. stream or lake showed only limited improvement between 1972 and 1983. In fact, out of approximately 350,000 miles of streams evaluated, only 47,000 improved in quality, while 11,000 declined in quality, and the remaining 292,000 miles showed no change. Of roughly 16 million acres of lakes evaluated, only 390,000 acres showed gains in quality, while 1.65 million acres actually declined.

Too Much, Too Soon

Looking beyond the fundamentals of air and water pollution, Jay D. Hair of the National Wildlife Federation concludes that Washington made "only limited progress in controlling [such problems as] soil erosion and nonpoint pollution, and in protecting wildlife habitat."

Furthermore, not all of the credit for reducing air and water pollution belongs to EPA regulators. The decline of the U.S. steel industry in the Midwest, price hikes for gasoline, oil, and coal during the mid-1970s, and two steep economic recessions have all helped to ease pollution, variously by depressing industrial production, forcing energy conservation, and putting a crimp in Americans' driving habits.

Recently, a disillusioned Barry Commoner reviewed the "course of environmental improvement" after more than a decade of sometimes draconian regulatory efforts. The veteran environmentalist and one-time presidential candidate found progress "spotty, gradual, and now [under the Reagan administration] diminishing.... There is a consistent explanation for the few instances of environmental success," he argued. "They occur only when the relevant technologies of production are changed to eliminate the pollutant." That implies a truly radical (and, in most cases, unworkable) solution to most of the nation's environmental

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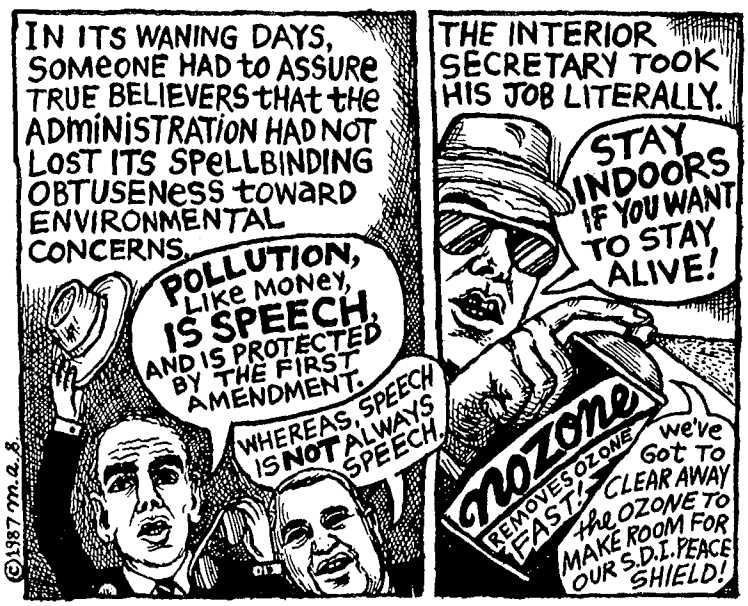

In May, Reagan administration aides reportedly suggested that Americans use sun lotion rather than worry about the ozone layer's decay. Above, Mark Alan Stamaty slaps U.S. Interior Secretary Donald Hodel in "Washingtoon."

difficulties. Commoner proposes, for example, a near-total ban on the production of plastics, pesticides, and detergents.

Such conclusions lead to the obvious question: After all the furor, all the money spent, and all the effort, why has U.S. environmental policy not been more effective?

The answer begins with the creation of the Environmental Protection Agency in December 1970, shortly after Earth Day's premier.

In brief, Congress gave the EPA too much to do in too little time. Trying to eliminate as many environmental hazards as possible, and acting in great haste, the legislators on Capitol Hill instructed the EPA to set standards for *all* major air pollutants (1970) and water pollutants (1972), to regulate pesticides (1972), to control solid waste disposal (1976), and to eliminate the toxic substances among the thousands of industrial chemicals (1976).

It was like asking a five-year-old boy to split an atom.

Even at the time, EPA scientists thought it was "difficult, if not impossible, to meet these needs within the generally recognized standards of scientific validity," according to William D. Ruckelshaus, the first EPA administrator. Politics also hampered the new agency. In the Clean Air Act of 1970 (as in many other environmental laws), Congress did not allow the EPA to assign higher priorities to the greatest known threats to human health. Congress considered the reduction of bother-

some but relatively less harmful photochemical smog, for example, to be just as important as lowering levels of much more dangerous airborne lead, arsenic, and acid sulfates.

Congressional pressure on the EPA (abetted by the environmentalist "green lobby") to solve all problems at once merely diminished the agency's ability to solve any of them. Today, struggling with an awesome workload, the EPA is five years or more behind schedule in setting standards for many pollutants. And it is often so busy devising new rules that it cannot properly enforce the old ones.*

A Piece of the Pie

On grounds of efficiency alone, the best way to curtail pollution is to make the expense of abatement (per pound of pollutant) the same for all plants. In practice, this would mean closing many antiquated factories, while leaving newer, "cleaner" plants in production. But for Congress, that would be too painful politically. It would concentrate the loss of jobs and corporate profits in a few highly visible industries and regions, notably the Frost Belt. By using vague standards—e.g., requiring the use of the best "reasonably available" pollution control technology—Congress has passed the hot potato to the EPA. Without a clear mandate to pursue efficiency, the EPA must weigh the political costs of its actions. As a result, corporations that operate old, dirty, inefficient plants generally pay *less* to control pollution (per pound) than do more prosperous firms with new facilities.

Often, the direct influence of Frost Belt legislators can be seen in the way laws are written. In 1977, for example, congressmen from Pennsylvania, West Virginia, and other Eastern and Midwestern coal mining states joined forces with environmentalists on Capitol Hill to push through a curious amendment to the Clean Air Act. It requires, in effect, the installation of expensive smokestack "scrubbers" that remove harmful sulfur dioxide emissions from all new coal-fired factories and utility plants, regardless of the sulfur content of the coal they burn.† The Easterners thus rigged the Clean Air Act to encourage Midwestern utilities not to switch from high-sulfur Eastern coal to the cleaner, low-sulfur coal mined in the Western plains. Thousands of Eastern coal mining jobs were saved. The practical effects of the amendment were twofold: It discouraged the replacement of aging, inefficient "dirty" plants

*In 1979, the GAO found that the EPA had actually tested smokestack emissions at only 498 of 19,973 plants and factories that were supposedly in full compliance with Clean Air Act regulations. When the GAO audited 921 of the "clean" firms, it found that 200 (22 percent) were not, in fact, meeting federal standards.

†Congress's track record in choosing pollution abatement technologies is not flawless. In 1970, it mandated that automakers use the "best available technology" to cut auto and truck emissions, effectively forcing Detroit to install catalytic converters in its vehicles. Yet, doing so not only raised the price of each car by roughly $150, but also discouraged owners of older, "dirtier" cars from purchasing newer, "cleaner" ones—not to mention the catalytic converters' tendency to break down.

by new ones, and it substituted a costly and uncertain remedy (scrubbers) for a sure-fire solution (low-sulfur coal).

Washington's water-pollution-control programs have their own set of expensive incongruities. Few taxpayers realize that the EPA's popular subsidies for municipal sewage treatment grants (the Construction Grants Program) are now one of the nation's biggest public works "pork barrels." Since 1972, Washington has spent $44 billion to help finance local sewage treatment facilities.

There is no solid evidence to show that this massive public works outlay has produced markedly cleaner lakes and streams. As the *Washington Post* observed in 1981, "after nine years of massive federal investment to build or upgrade sewage treatment works in 18,000 communities, about 2,000 of the projects have been completed, and most are small plants in small communities where pollution threats are often the least serious."

Yet, while the Reagan administration made deep cuts in the EPA's regulatory budget during the early 1980s, federal outlays for sewage treatment plants have remained at more than $2 billion per year.

Such "pork barrels" are all too common in Washington's War Against Pollution. The Superfund program is another example. In 1980, Congress created the Superfund amid a great hue and cry over the threat from toxic waste dumps such as New York's Love Canal. The cost to clean up 419 sites: $1.6 billion, raised chiefly by relatively painless (for Congress) and obscure new levies on industry. The scramble to get a piece of the Superfund pie created the spectacle of congressmen and mayors competing fiercely to have dumps in their communities certified by the EPA as "threats to public health."

Risk Assessment

Not surprisingly, when the Superfund legislation came up for renewal in 1986, Congress expanded the national priority list to 850 sites, and put another $8.5 billion into the Superfund. Seldom criticized, Superfund is not the product of careful risk analysis, but of public hysteria over the toxic waste threat—"an environmental problem," says Elizabeth Whelan of the American Council on Science and Health, "turned into an environmental fiasco."

The EPA, observes Fred L. Smith, a former agency official, "finds itself selecting projects based on their political and public relations value....The EPA has made Superfund [clean-up] monies available whenever penalizing the real polluters... would be politically difficult. As a result, Superfund's 'priority' list now includes a number of sites operated by viable companies [which could be forced to pay the cleanup costs] and even by the Department of Defense."

Assessing the risk of any pollutant is a tedious, uncertain process. The exact cause-and-effect relationship between a toxin and the mala-

REPORT CARD, 1970–87

On Earth Day 1970, few Americans guessed that the War Against Pollution would be so difficult. Assessing environmental change is no simple matter; many of the official statistics cited below are rough estimates. Items:

AIR U.S. industry's $58.3 billion investment in smokestack "scrubbers" and other devices (plus $12.8 billion from Washington) since 1972 has reduced emissions of most major air pollutants, such as sulfur dioxide and particulates. More than 2,600 (of 3,151) U.S. counties now meet air quality goals. Problems still to be fully defined and addressed: "acid rain," depletion of ozone in the Earth's upper atmosphere, and rising levels of carbon dioxide, a contributor to the "greenhouse" effect.

WATER Results are mixed. Only 11 percent of U.S. streams and two percent of lakes evaluated in 1982 were cleaner than they were in 1972. Overall, sewage-borne bacteria and certain nutrients (e.g., phosphates) have been cut by 46 percent nationwide, thanks to some 10,000 federally subsidized water-treatment plants (cost: $44 billion). Perhaps 65,000 industrial polluters, large and small, are still virtually uncontrolled, as is "run-off" from farms and city streets, which accounts for more than half of all water pollution.

TOXICS Since 1976, the Environmental Protection Agency (EPA) has registered more than 70,000 chemical compounds for commercial use: Fewer than 1,500 have been fully tested; only six have been banned. Outlawed compounds linger in landfills, in rivers, and in the fat cells of humans, fish, and game. The EPA, with 951 abandoned hazardous waste dumps on the $8.5 billion Superfund National Priority List, has begun cleanup work on roughly half of those sites. Also troublesome: growing quantities of nuclear waste.

PESTICIDES Of the 50,000 products registered since 1972, the EPA has banned 812 and suspended 3,200 for further testing. Production of U.S. pesticides dropped from 1.6 billion pounds in 1975 to one billion pounds in 1986. (Production of agri-chemicals reflects the farm economy's ups and downs.)

WASTE America now produces 26,000 pounds of solid waste (garbage) per person per year. Space for garbage dumps (landfill) is scarce. But new recycling techniques can recapture 40 percent of discarded aluminum and eight percent of glass. And 70 federally subsidized "waste-to-energy" plants now burn refuse to generate electricity.

LAND CONSERVATION Since 1970, U.S. national parks have grown in size by 50 million acres, wildlife reserves by 60 million acres, and national forests by 4 million acres (cost: $3 billion). Yet the loss of four million acres of private wetlands to farmers and developers has offset some of these gains.

ENDANGERED SPECIES Since 1973, five species (e.g., blue pike) have become extinct and three have recovered, leaving 973 species "endangered" or "threatened," by official count.

dies it causes is often obscure. There are other thorny questions: How many people will be exposed to a pollutant? What will their dosage be? How much exposure is harmful?

"Like most human endeavors, risk assessment is as much art or philosophy as science," observed the Conservation Foundation in its report *Risk Assessment and Risk Control* (1985).

A 1981 study of perchloroethylene (PCE), a solvent used by neighborhood dry cleaners, reveals the degree to which arbitrary decisions can affect risk estimates. Researchers Gregory L. Campbell and D. Warner North considered three crucial choices that scientists made in assessing the risk of liver cancer posed by PCE: the kind of test animals to use (rats or mice), the method of translating the results from animal to human terms (body surface area or weight), and the "dose-response" model (linear or quadratic) with which to estimate the effects of low doses that humans are exposed to based on data about high test doses.

There are no absolute scientific guidelines favoring one test method over another. But depending on the method chosen, the risk assessment can vary by a factor as large as 35,000—at current levels of exposure, that means that the risks of PCE use range from 347 human cancer cases per year in one scenario, to only .01 cases in another.

$250,000 Per Day

Even when the EPA has accurate risk estimates in hand, it still faces a dilemma: What level of risk is "acceptable?" At what price? Although some environmentalists argue otherwise, zero-risk is not an option in an industrialized society. To demand that automobiles pose no risks—to passengers or to those exposed to tail-pipe emissions—is, essentially, to forbid anyone from starting a car engine. And then what? Even walking or riding a bicycle entails risks.

In the case of air pollution, the 1977 Clean Air Act amendments required the EPA to set its national ambient air quality standards by using as a yardstick the susceptibilities of the most sensitive segment of the population—generally Americans suffering from respiratory or heart disease (e.g., asthma or angina pectoris).

As a result, the health benefits of reduced levels of carbon monoxide, for example, have been very costly indeed. In 1980, President Carter's Regulatory Analysis and Review Group compared two carbon monoxide standards, the EPA's nine parts per million (ppm), and a less stringent 12 ppm. Each "man-day" of sickness among those with cardiovascular disease averted by EPA's stricter standard, the group calculated, costs U.S. taxpayers and industry as much as $250,000.

Consider another example. To reduce arsenic emissions from a copper smelter, the EPA now fixes a level of control that lowers the risk of premature death for everyone in the area by five percent. The cost: $20 million per year.

FLEEING THE LOVE CANAL

"Everybody's come to town,/Those left we all do pity;/For we'll have a jolly time/At Love's new model city."

With this 1890s advertising jingle, set to the tune of "Yankee Doodle," William T. Love hoped to lure factories and 600,000 Americans to his new town near Niagara Falls, New York. There, the visionary entrepreneur planned to build a new canal, diverting part of the Niagara River around Niagara Falls to supply hydroelectric power to industry at no cost.

Love never completed his dream city. During the 1940s, the Hooker Electrochemical Company chose the partially completed canal as a dump for dioxin, chlorobenzene, and other wastes from its Niagara Falls factory. A decade later, Hooker was compelled to sell the site to the local school board, which parceled off plots to housing developers. By the late 1970s, William T. Love's ill-fated canal was front page news again. It had become, said *Newsweek* in 1978, a national symbol of America's "Faustian" bargain: "the products and by-products of industrial efforts to improve consumers' standards of living are threatening those same people with disease and death."

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Since the 1940s, people living near the canal had complained on and off of nauseating vapors, black sludge seeping into their basements, and, on a few occasions, burns and blisters from contact with the wastes. In 1976, amid growing national publicity about industrial "poisons," the issue caught the attention of Michael Brown, an enterprising reporter for the *Niagara Gazette* (circ.: 33,000). Brown ferreted out reports of alarming ills. Most ominously of all, he hinted, the Love Canal chemicals might be causing cancer.

A 1978 study by the New York State commissioner of health did not encourage calm. Its title: "Love Canal: Public Health Time Bomb." Governor Hugh Carey announced that the state would relocate, at taxpayers' expense, some 240 families living nearest the old canal site. Meanwhile, investigators seemed to find more horrors: an abnormally high incidence of nervous breakdowns, miscarriages, and birth defects.

President Jimmy Carter's Environmental Protection Agency (EPA) stepped in early in 1980, commissioning a quick "pilot" study to search for evidence of chromosome damage among Love Canal residents. On Saturday, May 17, before scientists could scrutinize the survey, its frightening results appeared on page one of the *New York Times*—leaked by an unnamed government source.

"It did not take long for the [media] hysteria to manifest itself," wrote Harvard's Martin Linsky. On Wednesday, the EPA announced the emergency evacuation of some 2,500 Love Canal residents from their homes. Later, Carter ordered the abandonment of all the Love Canal homes; the U.S. government paid the residents more than $30 million for their property.

But the very morning of the EPA press conference, an outside panel of scientists presented their review of the pilot study to EPA officials. They found

"inadequate basis for any scientific or medical inferences . . . concerning exposure to mutogenic substances because of residence in Love Canal." Later studies confirmed that Love Canal residents had not suffered abnormal rates of cancer, miscarriage, chromosome damage, or other serious ills.

The following year, a rueful *New York Times* concluded that "it may well turn out that the public suffered less from the chemicals there than from the hysteria generated by flimsy research irresponsibly handled."

Yet alarm over the possible "poisoning of America" set the tone for the disposition of other hazardous waste sites. Late in 1980, Congress established the $1.6 billion Superfund to begin cleaning up the most dangerous dump sites. Another ghost town was born in 1983, after the EPA found traces of a suspected carcinogen, dioxin, in the soil of Times Beach, Missouri, and ordered the evacuation of all 2,000 residents. Yet, as the editors of *Science* wrote, there was no "basis for believing that [dioxin] is a dangerous carcinogen in humans."

A cartoonist's response to Love Canal (1980).

By 1987, the EPA had concluded that hazardous waste dumps represented "relatively low risks." While certain chemicals caused burns or other injuries, scientists studying hundreds of suspected carcinogens had so far proved that only a few (notably, chromium) caused cancer in humans. The EPA said it would rather spend less on Superfund, more on urgent problems (e.g., "global warming," caused by carbon dioxide emissions). But Congress had other ideas: In October 1986, it added $8.5 billion to the Superfund.

Critics of Superfund, such as Murray Weidenbaum, former chairman of President Reagan's Council of Economic Advisers, favor more emphasis on economic incentives, such as taxes on hazardous waste producers and cash bonuses for communities that accept new dumps—"a birth control approach to pollution." Even critics agree that some cleanup efforts are necessary; none, as far as is known, have volunteered to buy homes near the Love Canal.

Still, seven years after Congress created the Superfund, notes Weidenbaum, "the hazardous waste dump problem is little improved." Only 13 of 951 target sites have been completely cleaned up. Since the Love Canal panic, no major new dumps have been built. "Midnight dumping" is likely to increase as hazardous wastes pile up on old sites and in "temporary" storage.

Should the EPA require such an expensive degree of control if only one person is exposed? Or 100? Or 1,000? On the other hand, if a million people are exposed, should the EPA require the copper firm to spend millions of dollars more just to reduce the risk to human health by another one or two percent?

There is no "correct" answer to this kind of dilemma. Regulators must decide subjectively what each life is "worth"—or how much to spend to prevent another death. While such decisions typically evoke angry responses ("How can you put a dollar value on a human life!"), the fact is that every regulatory decision involves such money-versus-safety calculations; they cannot be avoided.

Cancer Scare

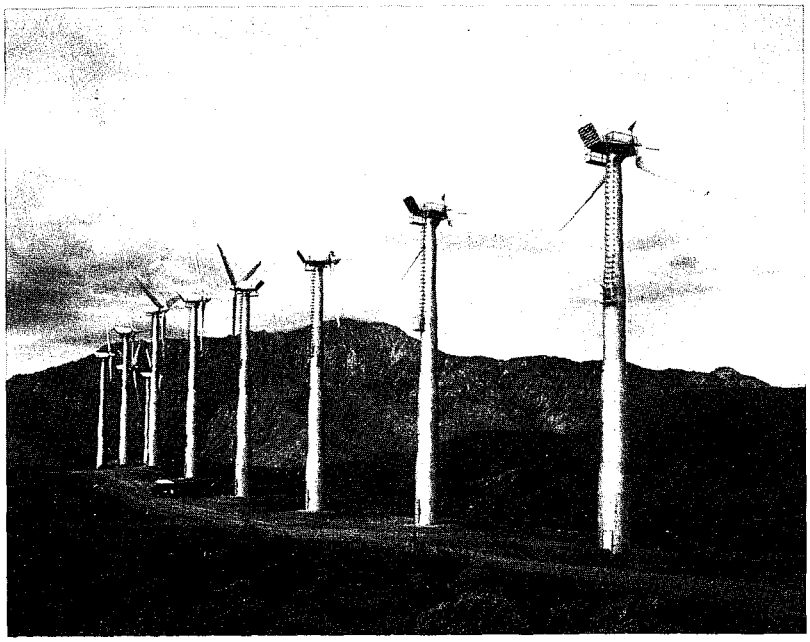
Indeed, the EPA and other U.S. regulatory agencies assign different values to life in every decision they make. The EPA's 1979 regulation of trihalomethanes (a hazardous by-product of chlorine in drinking water) calls, in theory, for the spending of $300,000 to save one life; by contrast, its 1986 rules on arsenic emissions require outlays of $19.2 million per life saved. (The all-time high is the U.S. Occupational Safety and Health Administration's [OSHA] 1985 formaldehyde regulation, which, in effect, demands expenditures of $72 ***billion***, mostly by U.S. industry, for each life saved.)

In part because of the nation's "cancer scare," Washington regulators are willing to force industry to spend, on average, 75 times as much to save someone from cancer as they are to prevent the accidental on-the-job death of a blue-collar factory worker. Overall, according to John F. Morrall III, an economist with the White House's Office of Management and Budget, the median cost-per-life-saved by cancer regulation is $37.6 million. But the average cost-per-life-saved by OSHA's workplace safety regulations is only $500,000.

To a certain extent, such discrepancies are created as each standard is set. The most difficult part of the risk assessment process is estimating what dosage of a pollutant, or toxin, or carcinogen is "acceptable" for an average individual.

The EPA takes the position that, when faced with risk uncertainties, one should "err on the side of safety." Yet Albert L. Nichols and Richard J. Zeckhauser, both Harvard economists, have shown that such "conservatism" in risk assessment can lead to regulatory decisions that actually jeopardize public health.

The debate surrounding the EPA's 1985 decision to require further reductions in the lead content of gasoline is one example. The agency had based its decision on, among other things, an estimate that such reductions would spare 150,000 children each year from exposure to "potentially hazardous levels of lead in their blood" (which can cause neurological damage). Critics of the decision argued that cracking down



The "Environmental Decade" spurred development of "alternative" methods of energy production. Above, the Painted Hills Wind Project, in Palm Springs, Calif., where 66 turbines each generate 65 kilowatts of electricity.

on lead would probably increase exposure to benzene, a lead substitute in gasoline, and a known carcinogen.

But, as Nichols and Zeckhauser note, early risk assessments for benzene had erred too much on the side of safety and greatly exaggerated benzene's dangers relative to those posed by lead, implying that lead levels in gasoline should not be lowered. Fortunately, the EPA did go ahead with a lead-reduction program, although it came uncomfortably close to making a very wrongheaded decision that would have *increased* the U.S. population's risk of illness.

Despite such pitfalls, the EPA is moving, albeit slowly, in the direction of rational, cost-efficient regulation of air and water pollution. For example, it is attempting to use market-oriented financial incentives to control pollution discharges.

Under the 1970 Clean Air Act amendments, Congress rashly outlawed the construction of new smokestack factories in cities and towns that violated Washington's air quality guidelines. But by 1976, it became clear that this policy was politically and economically foolhardy. Thus, the EPA devised a scheme to allow industrial growth without increasing the total level of pollution. That scheme was an "offset" policy. It permits the owners of, say, a new plastics plant to buy pollution "credits"

from local factory owners whose smokestacks spew forth *fewer* pollutants than the law allows.

Recent studies by economists Robert W. Hahn, Gordon L. Hester, and Thomas Tietenberg suggest that, so far, these market approaches to pollution abatement work only moderately well. For a variety of reasons, few "clean" businesses are actually selling pollution credits. One reason: The EPA has made it difficult to secure clear titles to the credits. And corporate executives fear that if they profit from selling their credits, public pressure will force the EPA to tighten the air quality rules.

Nonetheless, the market approach appears to be gaining support. In time, no doubt, it will prove itself to be a more effective way to reduce pollution than the command-and-control style of federal regulation dominant throughout the 1970s.

Where does that leave the nation's $73.8 billion-per-year environmental effort undertaken by business, government, and consumers?

It is making slow headway. It costs too much. It needs a legislative overhaul. Among other things, the EPA should continue to expand and improve its system of tradable air pollution credits, and extend the scheme to water pollution as well. Congress should revise the environmental statutes to eliminate ***uniform*** "technology-based" standards for all air polluters throughout the nation. In other words, it should give up the unrealistic notion that the air in cities such as Los Angeles can ever be as clean as the air in cities like Cheyenne.

Have we learned anything since the first Earth Day? Ironically, as the nation has prospered, and Americans enjoy ever longer, healthier lives, anxieties about the "invisible" threats to health have increased. Every freshly perceived hazard summons forth a new Rachel Carson to warn, in apocalyptic terms, of a grave danger to humanity, and to denounce the technological society that produced it. Toxic chemical waste—proclaimed the harbinger of a "carcinogenic century" by consumer advocate Ralph Nader—is only the latest example. In reality, for all of the anxiety and discomfort that pollution causes, it is *directly* responsible for relatively few deaths. When compared to other modern hazards (each year, automobile accidents kill approximately 46,000 people, smoking causes 150,000 cases of lung cancer, and exposure to asbestos induces 136 cases of fatal lung disease) the discernable effects of pollution on human health are minor.

Today, as legislators ponder action on acid rain, indoor air pollution, toxic waste, and other items on the environmentalist agenda, thoughtful Americans must aim for realistic goals. Seventeen years after Earth Day, the nation must move, as Winston Churchill once said in another context, "from the wonderful cloudland of aspiration to the ugly scaffolding of attempt and achievement."