



# EPA JOURNAL



**Special  
Anniversary  
Issue**



A quiet moment.

## An Anniversary

A decade and a half ago, on December 2, 1970, President Nixon created EPA by executive order. On this anniversary of the agency's birth, the *EPA Journal* explores the past 15 years of striving to protect public health and the environment.

The issue begins with an interview with Lee M. Thomas. Next is a feature

exploring the chain of events that led to the birth of EPA. Then the four former Administrators of the agency give their views on EPA's strong points and weaknesses.

Some of EPA's achievements are highlighted in graphs and charts. The agency's Regional Administrators discuss the principal achievements of their regions since 1970.

A selection of cartoons from the past 15 years gives a

humorous, if sometimes biting, insight to environmental issues. In another view from the outside, EPA's public image is mirrored through on-the-street interviews around the country.

Two long-time observers on the environmental scene trace the environmental movement since 1970. Another observer discusses industry's experience with environmental issues.

An article features one of the pioneers of conservation in America—John Muir.

Concluding the anniversary articles, some "old timers"—employees who have been with EPA since the beginning—describe their most memorable moments at the agency.

The magazine includes a regular feature—Update.

# EPA JOURNAL

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**Jennifer Joy Manson**, Assistant Administrator for External Affairs  
**Paul A. Schuette**, Acting Director, Office of Public Affairs

**John Heritage**, Editor  
**Susan Tejada**, Associate Editor  
**Jack Lewis**, Assistant Editor  
**Margherita Pryor**, Contributing Editor

EPA is charged by Congress to protect the nation's land, air, and water systems. Under a mandate of national environmental laws, the agency strives to formulate and implement actions which lead to a compatible balance between human activities and the ability of natural systems to support and nurture life.

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# Past, Present, and Future

An Interview  
with Lee M. Thomas

*EPA Administrator Lee Thomas, center, listens as Love Canal area residents Sam Giarrizzo, left, and Nunzio LoVerde discuss revitalizing the neighborhood near Bergholtz Creek. Thomas visited Love Canal in September.*

For this special issue, the EPA Journal interviewed Lee M. Thomas, the agency's Administrator. In the interview, he comments on major issues facing EPA and assesses the agency at this point in its history:

**Q** In your opinion, what's the most important thing EPA has accomplished in its first 15 years?

**A** We've established a focal point where the environment can be monitored, analyzed, controlled, and gradually upgraded, and we have devised means to ensure strict enforcement of environmental laws and regulations. We have achieved very gratifying results in reducing air and water pollution over the past decade and a half, and there is doubtless more to come.

**Q** The major gains have been in control of conventional pollutants. Do you think the agency has essentially completed the job of dealing with this problem?

**A** No. We've made significant progress in that area, but much remains to be done. I still spend a considerable amount of time on standards for conventional pollutants.

**Q** Are toxic chemicals the major challenge that the agency faces now?

**A** The toxics issue has evolved rapidly in recent years. That is reflected in the kind of authorities that the agency has been given to manage it, such as TSCA, RCRA, Superfund—all reflecting public demand for swift, effective action. EPA's overall emphasis on toxics has intensified during the 1980s.

**Q** Looking back over the last 15 years, do you think that industry has become more cooperative in environmental cleanup than it once was?

**A** Industry is certainly more reflective and sophisticated today. Environmental regulation is seen as an inescapable part of the cost of doing business. Industry no longer fights regulation on principle. The attitude today is "How do we make it work?"

**Q** The Bhopal incident last December has heightened citizen awareness of toxics in this country. Will this publicity make it easier for EPA to do its job?

**A** It could make it more difficult, not less. I don't think you need to increase public awareness in order to get support for environmental protection. The people have long made it clear that they want clean air and water. They don't want pesticides in their food. They don't want their children's health to be jeopardized by toxics. But an incident like Bhopal can encourage a tendency to demand quick solutions to complex problems. The public's tolerance for ambiguity, delay, and frustration is very limited. The notion of relative risk is not appreciated when you are downwind from a major perceived peril.

**Q** Do you think society is overreacting to the health risk from toxic chemicals and carcinogens?

**A** Generally I would say that there is no overreaction because the threat to health and environment is real. On the other hand, there is little understanding about the risks versus the benefits of various substances. Moreover, people have an unrealistic idea of how much government can do to reduce the overall risk of death and illness. The biggest

health payoff comes from modifying destructive personal habits like smoking, eating junk food, driving without a safety belt, and so on.

**Q** What should EPA's role be in educating the public about environmental problems?

**A** EPA has a significant role, one we should expand. I think the public needs a greater awareness of the emerging challenges and what EPA is doing to anticipate them, where the environmental dollar can be invested for the biggest payoff, et cetera. Our information programs should be site-specific when necessary, so that a community affected by a hazardous waste dump, say, gets a clear picture of the control strategy's purpose, time-frame, costs, benefits, and limitations.

**Q** Turning that around, does the public have any role in helping EPA assess risks and make decisions?

**A** People should come forward immediately and tell us what they know about pollution problems. The average person can often provide critical information that is available nowhere else. We need to hear what citizens have to say, so we should solicit their help.

**Q** What would you say has been the biggest environmental "surprise," good or bad, over the last couple of decades?

**A** I would say the sheer pervasiveness of hazardous waste contamination. Even the experts didn't anticipate a problem of such magnitude as we are now addressing under Superfund and RCRA. There was only



Niagara Gazette

an inkling of that 20 years ago. The evidence for a major threat to public health emerged largely within the 15-year lifetime of EPA. And only during the last five years did we begin to appreciate the immensity of the cleanup task ahead of us.

**Q** It used to be said when EPA was first set up that EPA employees have a unique relationship to their agency. Is this still true?

**A** Yes, emphatically. Most EPA staff regard environmental protection and restoration as a sacred trust and a necessity for the survival of the nation, if not the planet. They see the goals of EPA as consistent with their own personal values and objectives. So their identification with the agency is stronger than it might be elsewhere. I take great pride in this allegiance.

**Q** What is EPA's greatest strength, as you see it?

**A** It's our administrative and psychological maturity. We have come through some tough times. We have learned from our mistakes over the last

15 years. We recognize as never before the urgency of balancing our various environmental control responsibilities, and pursuing them within the context of economic growth and having to compete in the global marketplace.

**Q** When do you think that the acid rain problem will move from the research stage to the action stage?

**A** I don't regard the current phase as either research or action but rather as both. Under the Clean Air Act, we're reducing sulfur dioxide, nitrogen oxide, ozone—all of these have been characterized as precursors of acid rain. During the brief time I've been administrator we have promulgated nitrogen-oxide standards for heavy-duty trucks. We are developing an ozone-attainment strategy for 1987, and we have announced tall-stack regulations to control the dispersal of sulfur dioxide. These measures will probably have a significant impact on acid rain.

Our research program is very aggressive and has expanded dramatically over the last two years. It will provide the additional information we need on the causes of acidification in lakes and streams and on whether the problem is accelerating. We are trying to determine how much of the damage to forests is manmade and how much is natural. If we can identify the sources of acid precipitation—dry and wet—we may be able to devise control measures. So we are operating a two-track system: control plus research.

Now the question is what additional controls we may need and where to apply them. It's hard to say when our research program will provide the final word. During the next two to three years a lot of new data will come on-line, and I hope we can use them to determine potential solutions.

**Q** What would you most like to accomplish as Administrator?

**A** I would like to be able to look back four years from now and point to significant environmental results in each major program area. And I would

hope these gains would continue and be built upon by my successors: for example, systematic improvements in long-range planning, in defining results, and in the selection, training, and advancement of people within this agency.

**Q** What's the hardest part of your job?

**A** Clarifying complex scientific, policy, program, and legal issues and then choosing between options of apparently equal merit. It's a challenge to find out what is going on, what the hidden issues are, where the levers of power are located, and then persuade people to stick to their decisions, and yet be adaptable. Critics used to say that bureaucracy is hungry for power, but I think too many of us would rather avoid responsibility than seek it.

**Q** Can EPA do its job on its current tight budget?

**A** During the last two years the budget has grown substantially, and approximately the same level of resources will probably be available in the years immediately ahead. I'm confident we have enough to do the job assigned us. I seriously doubt whether we could efficiently use any more.

**Q** What leadership and managerial strategies are you employing to tap the diverse human resources we haven't fully exploited heretofore?

**A** We've got a number of efforts under way to utilize our talent more intensively, including the establishment of advisory groups on the use and development of people. We've got advisory groups on scientific and technical careers, a support advisory



group, and a number of initiatives related to training. I try to incorporate into the overall decision-making process an opportunity for input from all sectors of the agency. That is important not merely to build morale and generate a sense of community, but to elicit the creative ideas any agency on the cutting edge of law enforcement desperately needs.

**Q** Do you intend to place greater emphasis on the cross-media approach to pollution management?

**A** I do. The environmental statutes don't necessarily prohibit cross-media analysis, but they don't usually encourage it either. As a matter of fact, they promote a single-medium approach with deadlines and rigid requirements. I will continue to stress cross-media review so that we don't just transfer pollutants from one medium to another, but render them innocuous and dispose of them once and for all.

**Q** In a recent speech you mentioned a need for greater attention to environmental fireproofing as opposed to putting out brushfires after the fact. What are you doing to ensure that EPA does a better job of fireproofing?

**A** One is to devise a better system for longer-term objective-setting and strategic analysis for the agency generally and for the major program categories, whether it's wetlands protection or toxics or acid rain or

whatever. We've looked at how current objectives impact other media and we've set up methods to minimize that impact. We try constantly to check long-run against short-term goals. That kind of synchronizing process is vital for ecological fire prevention—otherwise short- and long-term aims may conflict and the interests of one medium may dominate another.

**Q** What's the part of your job that you most enjoy?

**A** The sheer intellectual challenge of mastering the details and figuring out how they add up. Environmental regulation is like a science fiction chess game with a nine-dimensional board, independently motivated pieces, and rules that change arbitrarily. I can recommend it for anybody who's easily bored or thinks he has all the answers.

**Q** How would you characterize EPA's public image at this point?

**A** I see it as continuing to advance steadily upward from the nadir it reached several years ago. Image, however, is not something that can be fabricated out of nothing. It develops from what you do, not what you say. It is humbling to realize that millions of people haven't the foggiest notion of what EPA does and

*The Real Thing? Following a three-vehicle wreck and a fire, an emergency response worker approaches a tanker truck still dripping with fire fighting foam. Simulated incidents like this are part of EPA's hazardous waste training. According to EPA Administrator Thomas, a number of initiatives related to training are underway at the agency.*

couldn't care less. We will never reach those who inhabit such a state of "invincible ignorance." But when issues affect people in immediate, palpable, discrete ways, they take a real and often stentorian interest. Our image depends upon how well and how promptly we address the events and conditions of pollution in thousands of communities across the land. If the public expects too much, too fast, however, even a good reputation may suffer unjustly.

**Q Does the public have an accurate perception of how well we are fulfilling our mandate and how complicated it is?**

**A** Not entirely. That's why I think it's important for us to develop a good public information program describing our responsibilities under the law and how we are trying to meet them. In turn, we must listen when the public tells us what its priorities are, or complains about the manner in which we exert our authority. It's a two-way channel that depends upon candor and goodwill. In my opinion, the agency's communication with the public is not as fruitful as it ought to be. Improvements must be made.

**Q You've been trying to give state and local government more control over environmental affairs. Are you satisfied with how this is working?**

**A** I'm not trying to give them more control just for the sake of it. Each of our statutes pretty clearly spells out our various responsibilities. Most of them cite state and local governments as the primary regulatory units, and point out a direction for us to take in delegating authority. It's just as important for us to define our oversight responsibility when we delegate a program as it is to determine whether the state can carry out that program. We are going through

a definitional process with a bias toward delegating power to the level of government that can operate a program effectively—and that is usually the one closest to the problem. I am generally satisfied with the progress we're making.

**Q Would you give any advice to the environmental movement a decade and a half after Earth Day?**

**A** It is the same advice that I give to agency staff: recognize that substantial progress has been made in environmental protection, but there's still a huge job ahead of us. The issues are complex ones without quick or cheap solutions. It's important that we conduct an informed debate in an open forum and avoid *ad hominem* rhetoric. I don't look at environmentalists as adversaries, but as people dedicated to a point of view that must be heard. They can be allies, but disagreements are inevitable given our different perspectives and responsibilities.

**Q Do you see any major new environmental issues looming on the horizon?**

**A** I'll go out on a limb and say I think we've already identified the big ones. Toxics and ground water will, of course, continue to get a lot of attention during the next decade. Only a simpleton would deny the possibility of some general, planetary catastrophe, such as nuclear winter, a runaway greenhouse effect, or some mass biological dieback. But "sufficient unto the day is the evil thereof."

**Q Putting aside large-scale disasters, what about after the year 2000? Are we still going to be grappling with toxics at that time?**

**A** We have found over the past 15 years that science and technology in time provide a broader range of solutions than one can at first imagine. The same process will be at work in the realm of toxics. To identify a problem is to take the first step toward solving it. Once solutions are available they have to be implemented and then they must be monitored to make sure they work over time. So I think that what we will see over the next 15 years is what we have seen over the last 15. Solutions will emerge for many of the problems we're dealing with today.

**Q Then you're optimistic that, as tough as some of these problems look now, we're nevertheless going to be able to get a handle on them?**

**A** Exactly. Problems we view as intractable today will probably look much less so at the turn of the century.

**Q Do you have anything you'd like to say in these pages to the staff of the agency?**

**A** Those who were instrumental in the establishment of this agency can take real pride in its accomplishments over, historically speaking, a very brief period of time. We have proven that a badly contaminated environment can be cleaned up if we are willing to dedicate enough time, energy, brains, and money to the task. If new environmental crises should develop, this country will be ready to confront them, because the institutional machinery is in place. EPA represents a fundamental transformation in American attitudes toward our common patrimony. We can face the future with a confidence firmly rooted in past achievements. □

# The Birth of EPA

by Jack Lewis

The official birthday of EPA is December 2, 1970. Like any other birth, EPA's needed progenitors, and a family tree stretching back for years. Surely no factor was more pivotal in the birth of EPA than decades of rampant and highly visible pollution. But pollution alone does not an agency make. Ideas are needed—better yet a whole world view—and many environmental ideas first crystallized in 1962.

That year saw the publication of Rachel Carson's *Silent Spring*, first in serial form in the *New Yorker* and then as a Houghton Mifflin best seller. This exhaustively researched, carefully reasoned, and beautifully written attack on the indiscriminate use of pesticides was not exactly light reading. Yet it attracted immediate attention and wound up causing a revolution in public opinion.

An inveterate bird-watcher, Carson derived her missionary zeal from her fear that fewer species of birds would be singing each spring unless pesticide poisoning was curtailed. The readers of her book, however, were less alarmed by the prospect of a "silent spring" than they were about people dying from any number of hidden poisons lurking in what had previously seemed a benign environment. It was not hard to wax hysterical after reading in Carson's book that "the common salad bowl may easily present a combination of organic phosphate insecticides" that could "interact" with lethal consequences to the unsuspecting salad muncher.

*Silent Spring* played in the history of environmentalism roughly the same role that *Uncle Tom's Cabin* played in the abolitionist movement. In fact, EPA today may be said without exaggeration to be the extended shadow of Rachel

Carson. The influence of her book has brought together over 14,000 scientists, lawyers, managers, and other employees across the country to fight the good fight for "environmental protection."

Skeptics then and now have accused Carson of shallow science, but her literary genius carried all before it. Followers flocked to Carson's cause—rendered all the more sacred by her premature death in 1964. Suddenly, everywhere people looked, they saw evidence of nature's spoilation. Concern over air and water pollution spread in widening eddies from the often-forgotten core of the movement: a highly detailed and intellectually challenging book about commercial pesticides.

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## *The issue of the environment exploded on the country like Mount St. Helens.*

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The disillusioning effect of the Vietnam War enhanced the popularity of *Silent Spring*. When people heard of the defoliation tactics used in the jungles of Indochina, they became more receptive to the "environmental" ideas advanced by Carson and her countless imitators. The cognoscenti even began using a more arcane term—"ecology"—in reference to a science of the environment, then still in its infancy.

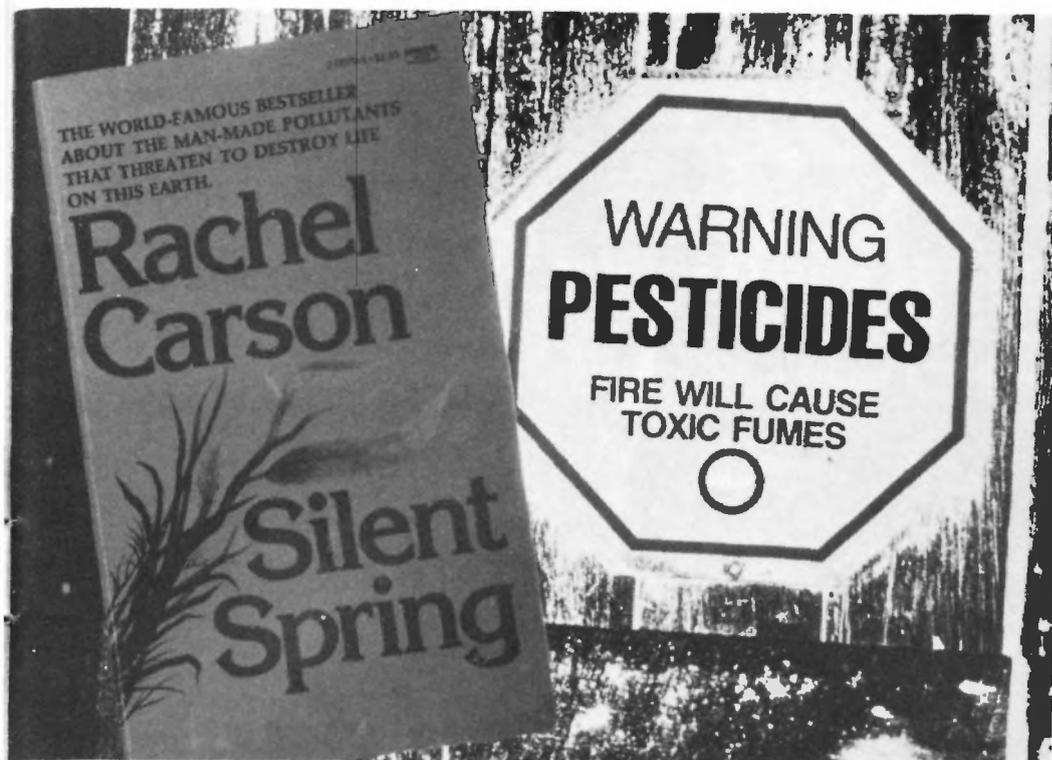
The period 1962 to 1970 witnessed a slow erosion in the popularity of the word "conservation," as man himself replaced trees and wildlife as the endangered species, bar none. Overpopulation and industrialization had left mankind trapped in a deteriorating environment. The damage was not just esthetically displeasing but threatening to the very survival of man. Environmentalism gained strength as a movement dedicated to ending—and if

possible—reversing this decline in the human environment.

Everywhere television programs, symposia, and "teach-ins" raised the burning question: "Can Man Survive?" In May 1969, U Thant of the United Nations gave the planet only ten years to avert environmental disaster; the following month, he blamed the bulk of planetary catastrophe on the United States. Under Secretary of the Interior Russell E. Train spoke skeptically at the April 1969 Centennial of the American Museum of Natural History: "If environmental deterioration is permitted to continue and increase at present rates, [man] wouldn't stand a snowball's chance in hell [of surviving]."

By late 1969, the subterranean rumblings heralding the impending explosion could already be heard. On August 31, Senator Ted Stevens of Alaska complained: "Suddenly out of the woodwork come thousands of people talking about ecology." On October 20, Robert Bendiner—in a signed *New York Times* editorial—had a startling prediction to make: "Call it conservation, the environment, ecological balance, or what you will, it is a cause more permanent, more far-reaching, than any issue of the era—Vietnam and Black Power included."

The Nixon Administration, although preoccupied with an unpopular war and a recession-ridden economy, took some stopgap action on the environmental front in 1969. In May, President Nixon had set up a Cabinet-level Environmental Quality Council as well as a Citizens' Advisory Committee on Environmental Quality. His critics charged that these were largely ceremonial bodies, with almost no real power.



Steve Delaney

Rachel Carson's book about pesticides, *The Silent Spring*, published in 1962, sparked a revolution in public opinion about pollution.

Stung by these charges, President Nixon appointed a White House committee in December 1969 to consider whether there should be a separate environmental agency. The President had already asked Litton founder, Roy L. Ash, to take a sweeping look at organizational problems throughout the government.

It was at just this time that Congress sent to the President a remarkable bill known as the National Environmental Policy Act (NEPA). Senator Gaylord Nelson (D-Wis.)—looking back at the “Environmental Decade” in 1980—called NEPA “the most important piece of environmental legislation in our history.” It is easy to see why.

A tone of high-minded idealism pervades this statute. NEPA’s stated purposes were:

- “To declare a national policy which will encourage productive and enjoyable harmony between man and his environment.”
- “To promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.”
- “To enrich our understanding of the ecological systems and natural resources important to the Nation.”

To further these ends, NEPA called for the formation of a Council on Environmental Quality (CEQ) to give the President expert advice on environmental matters. The CEQ was also charged with reviewing Environmental Impact Statements, which were now required of all federal agencies planning projects with major environmental ramifications.

In an era of bitter ideological disputes, public opinion was virtually unanimous on the need for the national environmental policy NEPA would generate. Turning his reluctant consent into a show of visionary statesmanship, President Nixon chose to sign NEPA on New Year’s Day, 1970—thus making the signing his “first official act of the decade.” He named future EPA Administrator Russell E. Train to be the first CEQ Chairman.

NEPA’s New Year’s Day signing did prove to have more than symbolic significance. Enactment of this law set the stage for a year of intense activity on the environmental front. Senator Gaylord Nelson recalls that right after the passage of NEPA, “the issue of the environment exploded on the country like Mount St. Helens.” The authors of the first CEQ Annual Report on Environmental Quality had the same sense of an unprecedented watershed. In August 1970, they wrote: “Historians may one day call 1970 the year of the

environment—a turning point, a year when the quality of life [became] more than a phrase. . .”

It was in this atmosphere of intense concern for environmental issues that President Nixon delivered his 1970 State of the Union Address. Speaking to both houses of Congress on January 22, the President proposed making “the 1970s a historic period when, by conscious choice, [we] transform our land into what we want it to become.” He continued this activist theme on February 10, when he announced a 37-point environmental action program. The program gave special emphasis to strengthening federal programs for dealing with water and air pollution.

Two months later, on April 22, the first Earth Day celebration brought 20

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*Suddenly out of the woodwork came thousands of people talking about ecology.*

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million Americans out into the spring sunshine for peaceful demonstrations in favor of environmental reform. Senator Gaylord Nelson (D-Wis.) and Congressman Paul McCloskey (R-Calif.) gave bipartisan sponsorship to the event, but its popularity far surpassed their wildest expectations. President Nixon was not caught by surprise. He had spokesmen deployed throughout the country to present the Administration’s case at teach-ins.

The first Earth Day lives in popular memory to this day as a joyous and life-affirming moment in American history. The theatrical flair of some of

the demonstrators had a great deal to do with its success. Oil-coated ducks were dumped on the doorstep of the Department of the Interior. . . A student disguised as the Grim Reaper stalked a General Electric Company stockholders' meeting. . . Demonstrators dragged a net filled with dead fish down Fifth Avenue, and shouted to passers-by, "This could be you!"

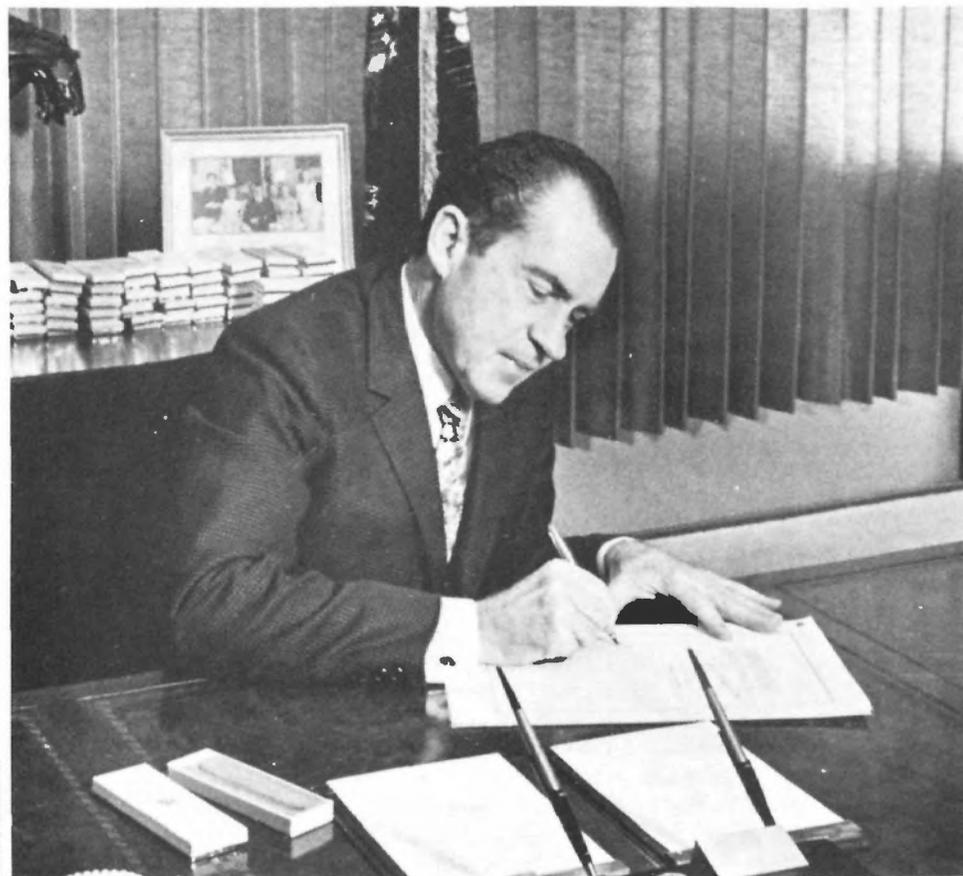
The phenomenal success of Earth Day gave greater priority than ever to environmental issues. In particular, it strengthened the impact of the report that Roy L. Ash of the President's Commission on Executive Reorganization had submitted on April 15. That report argued strongly that an

### *EPA opened for business in a tiny suite of offices in northwest Washington, D.C.*

independent agency was needed to coordinate all of the Administration's new environmental initiatives.

In sending Reorganization Plan No. 3 to Congress on July 9, the President admitted that he had first been reluctant to propose setting up a new independent agency. Eventually, however, he was convinced by all "the arguments against placing environmental protection activities under the jurisdiction of one or another of the existing departments and agencies."

These arguments were twofold: first, the primary mission of each existing department would bias any decisions it made on a government-wide basis concerning the environment; second, the same factors might raise questions



National Archives

about the objectivity of any existing department as a standard-setting body for other agencies and departments.

To avoid such pitfalls, President Nixon called for "a strong, independent agency." The mission of this "Environmental Protection Agency" would be to:

- Establish and enforce environmental protection standards.
- Conduct environmental research.
- Provide assistance to others combatting environmental pollution.
- Assist the CEQ in developing and recommending to the President new policies for environmental protection.

The components of the new agency were pieced together from various programs at other departments. From the Department of Health, Education and Welfare (HEW) came several functions: those of the National Air Pollution Control Administration, the bureaus of Water Hygiene and Solid Waste Management, and some functions of the Bureau of Radiological Health. The Food and Drug

Administration of HEW gave up to EPA its control over tolerance levels for pesticides.

The Department of the Interior contributed the functions of the Federal Water Quality Administration and portions of its pesticide research responsibilities. EPA gained functions respecting pesticide registration from the Department of Agriculture. From the Atomic Energy Commission and the Federal Radiation Council, the new agency gained responsibility for radiation criteria and standards.

Two of these programs—HEW's National Air Pollution Control Administration (NAPCA) and Interior's Federal Water Quality Administration (FWQA)—represented the core of the federal government's pollution-control apparatus prior to the birth of EPA. The air program was founded in 1955 in reaction to a wide range of alarming problems: the suffocating blanket of

January 1, 1970: President Richard Nixon signs the National Environmental Policy Act.

smog covering greater Los Angeles; the 1948 atmospheric inversion that temporarily raised the death rate in Donora, Pa., by 400 percent; a London "fog" in 1952 that killed 4,000 people over a four-day period. Equally severe water pollution problems—untreated sewage and industrial waste, dying rivers and lakes—led to the founding of the predecessor of the FWQA in 1948.

NAPCA began as a research body with no regulatory powers. The Clean Air Act of 1963 gave NAPCA enforcement authority to attack interstate air pollution problems. Two years later, the act was amended to permit NAPCA to set air pollution standards for new motor vehicles. In reality, however, little effective use was made of these powers in the 1960s, and they were further diluted by the Air Quality Act of 1967, which re-emphasized the principle of state and local control over air pollution.

The Federal Water Quality Administration (FWQA) began as a program in the Public Health Service of HEW but was transferred to Interior in 1966. The FWQA was authorized to give technical assistance to states and localities and to distribute construction grants for municipal waste treatment programs. Like NAPCA, the FWQA gained enforcement and standard-setting powers in the 1960s, but the actual exercise of these powers fell far short of expectations.

One of EPA's goals was to give real bite to the federal enforcement bark. But this would clearly be impossible unless EPA's first Administrator was able to fuse the air and water programs as well as those for pesticides and radiation into one effective working entity. Tribal boundaries separated all these programs, and their staff of 5,650 highly skilled and highly competitive people. The

challenge of getting this many people to work in harmony would in itself have overwhelmed most managers.

But President Nixon made the task facing EPA's first Administrator even greater by insisting upon the importance of viewing "the environment as a whole." The President's charge to the first EPA Administrator was to treat "air pollution, water pollution and solid wastes as different forms of a single problem." The main purpose of the reorganization that gave birth to EPA was to introduce a "broad systems approach [that]. . . would give unique direction to our war on pollution."

This daunting assignment went to a 38-year-old Assistant Attorney General named William D. Ruckelshaus. President Nixon nominated Ruckelshaus

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### *A state of cheerful chaos prevailed during the first few months of the agency's operation.*

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on November 9. On December 1, at his Senate confirmation, Ruckelshaus received a magnanimous blessing from the Democratic Party's leading environmental activist, Senator Edmund Muskie (D-Maine): "I hope that you pre-empt the title that has been tossed about loosely in recent years. I hope that you become known as Mr. Clean."

That was, indeed, to become the favorite tag for EPA's first Administrator. It was not long before the media were portraying William Ruckelshaus as a knight in shining armor charging out to do battle with the wicked polluters of America. By adopting an aggressive stance toward a wide variety of environmental problems,

EPA's new Administrator managed to gain headlines for his infant agency almost from the day of its birth.

EPA opened for business in a tiny suite of offices at 20th and L Streets in northwest Washington, D.C., December 2, 1970. A mere five days later, Administrator Ruckelshaus attracted wide media attention when he delivered the keynote address to the second International Clean Air Congress. Ruckelshaus said that he and EPA were starting with "no obligation to promote commerce or agriculture." By promising to enforce "reasonable standards of air quality," Ruckelshaus positioned himself as the governmental advocate of environmental progress, not merely a mediator between industry and the public. In fact, he seemed to envision for EPA a crucial role in the "development of an environmental ethic" among businessmen and citizens alike.

On December 11, Ruckelshaus went on the offensive against three cities with noteworthy water pollution problems: Cleveland (of "Burning Cuyahoga" infamy), Detroit, and Atlanta. EPA gave the mayors of these cities six months to come into compliance or face court action. Four days later, he spoke to a Governors' conference of the "imperative" need for unbiased state pollution control boards. (Fortunately, many of these were coming under the aegis of state "environmental protection agencies," a large number of which were founded during the Year of the Environment.)

Some of the first problems tackled by EPA were less sublime than the Administrator's rhetoric. A ruling on



marine toilets was necessary, but hardly glamorous. A missing interceptor at Key Bridge brought a flood of untreated sewage into the Potomac. . . and a flood of irate reporters into EPA. Noise fanatics were deafening in their protests over the Supersonic Transport. Agency lawyers had to dredge up a dusty statute from 1899 before they could take any action against factories discharging scalding water into lakes and streams.

But the Year of the Environment came to an end on an extremely upbeat note with the signing of a major piece of environmental legislation. The Clean Air Act (CAA) of 1970 was the perfect bookend to balance the National Environmental Policy Act the President had signed with such a flourish on New Year's Day.

The Clean Air Act brought dramatic—and substantive—changes to

the federal air quality program. The act required EPA to establish national air quality standards as well as national standards for significant new pollution sources and for all facilities emitting hazardous substances. The CAA took dead aim against America's leading source of pollution: the automobile. The law set statutory deadlines for reducing automobile emissions levels: 90 percent reductions in hydrocarbon and carbon monoxide levels by 1975 and a 90 percent reduction in nitrogen oxides by 1976.

Among the less tangible but vital contributions of the CAA, according to former Deputy Administrator Alvin Alm, were the working arrangements forged while setting and enforcing its standards. These "set the pattern for federal-state relations for years to come."

At the outset, President Nixon promised the states a chance to make "a good faith effort" to implement CAA standards, but warned that federal enforcement action against violators

would be swift and sure. Alluding to a popular Clint Eastwood picture of the day, the President said that William Ruckelshaus would be "The Enforcer" in cases of air pollution.

An early test of EPA's resolve in this matter led to a confrontation with Union Carbide. Under pre-existing air statutes, Union Carbide had been required to submit a timetable for bringing its Marietta, Ohio, plant into compliance with recommended federal standards by the end of 1970.

On January 9, 1971, William "The Enforcer" Ruckelshaus rejected Union Carbide's schedule for reducing sulfur oxide emissions from its Marietta plant. The company retaliated by threatening to lay off 625 workers. Eventually, EPA was able to forge a compromise that saved the workers' jobs. This was done

*The Way We Were: Air pollution in Pittsburgh, Pa., as seen from the north portal of Liberty Tubes in 1945.*

without jeopardizing the environmental goal of securing from Union Carbide a workable emission reduction plan. The company's Marietta plant brought its sulfur oxide emissions down 70 percent by April 1972.

It is impressive that EPA was able to take the strong positions it did during its early days. Outward appearances did not always square with

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*EPA today may be said without exaggeration to be the extended shadow of Rachel Carson.*

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behind-the-scenes reality. In fact, a state of cheerful chaos prevailed during the first few months of the agency's operation. Program offices were scattered in seven or eight locations throughout Washington, D.C. Even tracking down a particular program team was sometimes an impossible task.

Not until March 1971 was the General Services Administration able to move all of EPA's Washington workers into an office complex big enough to house them: Waterside Mall in Southwest Washington—a location that long ago burst its once-ample seams. It was also at this time that semi-permanent space was found for the staff of EPA's embryonic offices in each of the ten federal regions. Getting the regional offices settled was important because of

the activist role the new Administrator had in mind for them in his new regime.

To organize the EPA monolith, national and regional, Administrator Ruckelshaus tried to foster a "systems approach" to pollution problems by grouping both air and water programs under a single Assistant Administrator for Media Programs. A separate Assistant Administrator for Categorical Programs was to monitor three "categories" of manmade pollutants: pesticides, radiation, and solid waste.

All five of these programs eventually popped out from under their "systems" groupings and became separate administrative units, with separate Assistant Administrators. A. James Barnes, then a Special Assistant to Administrator Ruckelshaus and now EPA's Deputy Administrator, commented recently that "we were not as true as we should have been to this notion of dealing with environmental problems as a whole."

Consolidating specific functions on an agencywide basis was an easier goal to accomplish. Research, enforcement, and management functions—once a part of each of the programs united to form EPA—were drawn together under individual Assistant Administrators responsible for forging unified agency programs in each area.

The problem of developing an overall agency identity was more elusive. Ultimately, it depended a great deal on the leadership qualities of the new Administrator, and there is widespread agreement among those who went through that exciting time that Ruckelshaus' leadership was up to the challenge: "extraordinary"; "energetic"; "very upbeat"; "very free-wheeling"; "much less bound in red tape"; responsible for "fantastic esprit de corps"; "a very gung-ho attitude"; "a family feeling."

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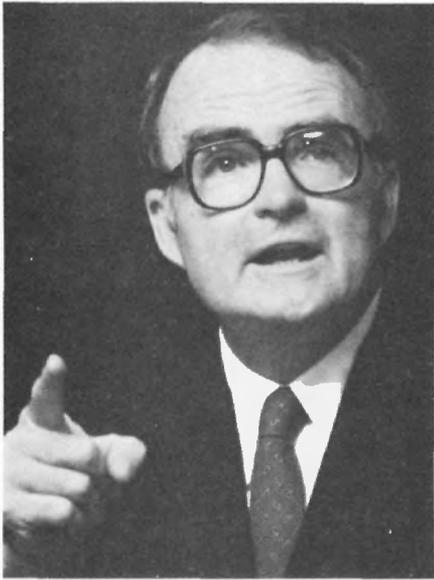
### *Today is the Golden Age.*

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Ruckelshaus himself refuses to idealize the early 1970s. In fact, he blames the idealism of the Year of the Environment for many of EPA's subsequent problems: "We thought we had technologies that could control pollutants, keeping them below threshold levels at a reasonable cost, and that the only things missing in the equation were national standards and a strong enforcement effort. All of the nation's early environmental laws reflected these assumptions, and every one of these assumptions is wrong. . . . The errors in our assumptions were not readily apparent in EPA's early days because the agency was tackling pollution in its most blatant form. The worst problems and the most direct ways to deal with them were apparent to everyone."

Other EPA old hands share Ruckelshaus' desire to de-mythologize the early days of the agency. "There was no 'Golden Age,'" says Howard Messner, who helped get EPA rolling in the early 1970s and then returned to the agency with Ruckelshaus in 1983. "It was dramatic to be here then, but the agency wasn't as productive in terms of substance or achievement as EPA is in 1985. EPA has developed into the most competent agency in the federal government, and morale is still very high among our extremely talented and dedicated staff. Today is the Golden Age." □

# Views from the Former Administrators



**William D.  
Ruckelshaus**

(Served December 1970 to April 1973 and May 1983 to January 1985)

When I returned to EPA in the spring of 1983, I was under no illusion that everything was just fine. I knew there would be some surprises. I was not disappointed.

I was surprised at how emotional the issue of the environment had become. Feeling strongly is one thing—giving reason a permanent holiday is something else. The relationship between the political appointees of the Reagan Administration and the press, the Congress, and the public was marked by deep mistrust and fiery rhetoric. The environmental community was particularly outspoken in its opposition to anything the Administration proposed.

On the positive side I found much of American industry truly concerned by what had happened to EPA. A strong, trusted, and self-confident EPA was essential, not only to protect the environment, but also to ensure that industry could continue to function. A beleaguered EPA meant an uncertain future for those subject to its regulation.

In spite of these surprises and a feeling that the agency was still

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operating with a flawed statutory and analytical base, I was sustained by my fundamental faith in the dedication and ability of the employees of EPA. My second tenure at the agency only served to reinforce that conviction.

EPA's great strength in 1983 was the same as in 1970—its people. There is something about working at a place as challenging, interesting and, yes, frustrating as EPA that attracts the best and the brightest our country can produce. Those attracted don't all stay, but they never leave without being enlarged by their experience. And, when EPA was in trouble, as it clearly was in 1983, many dropped what they were doing and came back to help.

It is to those who came when called and those who hung on through the storm that I say thanks. There was a time when it was not clear if there would be a fifteenth birthday. It has arrived and the agency is alive, well and certainly wiser than on its first, fifth, or tenth anniversary.

To those of you who have stayed through the thick and the thin—happy birthday!

You stand high in your countrymen's eyes, as well you should.

You operate in waters that are uncharted and uncertain.

You do your best in the face of impossible mandates as to the levels of risk reduction you can achieve and the time it takes to get there and yet you proceed with grace and good humor.

I shall never forget my times spent at EPA.

I will simply repeat what I said when we all shared that wonderful moment on the mall at Waterside in April of 1983: *There are no finer public servants anywhere in the world than the men and women of EPA.*

It was an honor to have served with you once again.



**Russell E. Train**

(Served September 1973 to January 1977)

At age 15, EPA is in the throes of moving from adolescence to adulthood. Since its start, the agency has made significant strides in curbing conventional air and water pollutants. It has accumulated considerable experience in the intricacies of pollution control. Today, like a youth on the verge of becoming an adult, EPA is beginning to grasp fully the rough course ahead.

The exuberance characterizing the agency's early years could hardly continue. In successive Congressional sessions, the nation's lawmakers handed EPA major new responsibilities. The Clean Air Act came in 1970, Clean Water in 1972, the Federal Environmental Pesticide Control Act the same year, the Safe Drinking Water Act in 1974, the Toxic Substances Control Act and the Resource Conservation and Recovery Act in 1976, and Superfund in 1980, among others. EPA's funding and staff have never been adequate to carry out the plethora of tasks assigned it by Congress under these laws: prepare and issue regulations, set standards, evaluate chemical risks, clean up pollution, form partnerships with states, sponsor timely research, assess the economic impacts of regulations, keep Congress and the

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public informed, meet deadlines, and so on.

One can argue about what is adequate support for EPA. While some would like to see its budget increased manyfold, few familiar with the magnitude and complexities of pollution problems would advocate fewer dollars. Yet EPA's funds were cut in the first Reagan Administration budget. Fortunately, recognizing the error of this position, as well as public and Congressional outcry at the erosion of support for the agency, the Administration has modified its position.

But with the possible exception of Superfund, EPA programs will have to scrimp. Particularly in the area of toxic pollutants, failure to build and sustain a strong research program will have long-term adverse effects.

It has not been easy for the agency to respond to its competing overseers. EPA officials report to more than a score of Congressional subcommittees. The White House and the Office of Management and Budget (OMB) are always to be reckoned with. Witness the escalating tug of war between OMB and EPA over how much independence EPA can exercise in setting its regulatory agenda and in finalizing regulations. Splintered lines of accountability are likely to continue, forcing EPA to make the best of a difficult situation.

EPA's constituencies—business, environmental organizations, farm groups, and others—also have been demanding critics. Lawsuit after lawsuit has plagued the agency. Sometimes court directives have prodded the government to move more quickly. But more often than makes for good government, lawsuits have merely delayed agency actions and introduced uncertainties into environmental policy. If there is a hopeful note, it is that after

a rocky road, EPA is beginning to engage its critics, experimenting with new methods—regulatory negotiation is one—to get beyond the adversarial character of so many past environmental debates.

Nor has it been easy to deal with its primary mission, pollution control. The compartmentalized nature of EPA's programs is in part attributable to the jurisdictional divisions of Congress. In part, it seems a normal state of affairs for a government agency that functions, after all, like any large bureaucracy with rules and procedures and forms in triplicate. But dealing separately with pollution problems in air, water, and land defies a growing understanding of pollution problems. Pollutants generally, toxics in particular, tend to move readily among air, water, and land. A disparity exists between the multiple environments defined by statutes, regulations, and Congressional committees and the one natural environment with which those policies and institutions try to deal.

An appreciation of the "cross-media" phenomenon, as many now call it, underlay the creation of EPA in 1970 when several offices scattered throughout the federal government were combined into a single line agency. That appreciation was lost in the day-to-day dynamics of creating a new agency, only to be rediscovered as the problems posed by toxic chemicals became better understood. As the still rudimentary process of assessing risks from chemicals improves—we would do well to keep in mind that only a small fraction of chemicals used in commerce have been adequately tested for health and environmental effects—EPA could find itself confronting the need for a major overhaul of its pollution control authorities.

The extent and seriousness of air and water contamination by toxic chemicals was hardly recognized by the drafters of

the Clean Air and Water acts 15 years ago. Today, public concern is mounting over toxic air pollutants indoors and outside, over pesticides and other chemicals washing off farmlands and other "nonpoint" sources into our waterways, over pollution of ground water, over the slow pace of cleanup in the Superfund program, over the effects of acid rain. The agency has yet to tame these problems.

Problems with toxic chemicals are cropping up worldwide, in industrial accidents, in farmworker health, in migrating wildlife. This parallels the growth of environmental awareness around the globe. In 1972, at the United Nation's Stockholm conference on the environment, scarcely more than a dozen developing nations had agencies addressing environmental matters. The developing world tended to cast the issue as if they, too, deserved the chance to pollute their way to economic well-being. Since then, more than 100 developing countries have formed some kind of environmental ministry. Some are newly receptive to benefiting from U.S. experience in pollution control. Many recognize the increasingly clear international dimensions of environmental problems. Finding a proper, effective role for EPA—technical assistance, sharing research and information on standards and risks, initiatives in international forums—remains an ongoing concern.

Undaunted, EPA at age 15 has going for it one major plus: as solid, competent, knowledgeable, and dedicated a staff of civil servants as can be found anywhere. Their commitment bodes well for the agency despite some formidable challenges, current and yet-to-come. Among the most pressing: toxic pollutants, ground-water contamination, and acid rain.



## Douglas M. Costle

(Served March 1977 to January 1981)

There is, I am told, an ancient curse: "May you live in interesting times."

That phrase aptly describes EPA's position today. In its brief 15 years of existence, the agency has been living on the razor's edge of our society's attempt to come to grips with the legacy of one of the most significant economic and environmental events of this century: the chemical revolution.

Our chemical industry has brought us thousands of substances that save lives, increase agricultural productivity, and improve our living standards. But among them, too, have been chemicals whose side effects we did not anticipate, and often could not judge, for years: Thalidomide, DES, PCBs, EDB, to mention a few.

Our ability to create new substances outran our knowledge about their characteristics, pathways, and ultimate effects. According to a 1983 study by the National Research Council of the National Academy of Sciences, little or no health information exists in government files about the chronic

effects of almost 90 percent of all chemicals, including many commonly used drugs, cosmetics and industrial compounds. The Council reported that, of the more than five million chemicals known to man, about 53,000 are commercially important, and for an estimated 86 percent of these, so little is known about their toxicity that not even a partial assessment of their health hazards can be made.

I cite this finding principally to illustrate what EPA staff and people familiar with environmental issues already know: most decisions involve "judgment calls." In almost no case is the scientific evidence free of ambiguity. Moreover, in our complex industrial economy, the environmental unknowns almost always seem greater than the knowns.

Many of these materials are appearing in human tissue and in essential food and water supplies. Poll after poll has shown overwhelming public demand for government action to protect people against involuntary exposure to even



## Anne M. Burford

(Served May 1981 to March 1983)

The Environmental Protection Agency is unique among all other federal agencies in that the combined expectations of both the American public and the EPA staff exceed the capability of any agency to achieve those goals. And yet, that seeming contradiction is in reality an asset, a strength, that continues to serve the agency and the public well.

My 22-month tenure as head of EPA was hardly the agency's most serene hour. By the time I left, the air was filled with so many charges, and the staff and I were so bogged down in the fight with Congress over the doctrine of executive privilege, that the agency itself seemed hardly to be functioning.

It was functioning, however. Indeed, we had instituted a number of fundamental changes that were beginning to have their desired effect, and as a result of the internal dialogue that I had initiated in order to learn which changes were most necessary, I also learned a great deal about the strengths and weaknesses of EPA.

Let me begin with the weaknesses—so that I can end on an upbeat note. In my opinion, the single greatest weakness within EPA—and from the very beginning, not just recently—is its lack of solid management skills, from top to bottom. When I took office, there were substantial backlogs in every

programmatic area, with the licensing backlogs in RCRA being the most flagrant example (and one which is hardly improved today.)

The need for stronger management became so pronounced that Congress stepped into the vacuum and began imposing a series of deadlines, in effect taking over the management function at the highest levels. The fundamental importance of deadlines, whether internally or externally imposed, was recently recognized by a joint study of the Environmental and Energy Study Institute and the Environmental Law Institute, the very title of which underscores my point: "Statutory Deadlines in Environmental Legislation: Necessary But Need Improvement."

I was blessed with a few top-notch managers (Comptroller Morgan Kinghorn and Superfund chief William Hedeman, among others, come immediately to mind) but not enough. As one of my former top aides told me, "There is not a large cadre of superior managers with a lot of management skill. Traditionally, people come from the technical areas and are 'thrust up' to management posts. There is simply not enough depth. Also, we have developed a star system, in that if people are recognized as being good, we give them too much more to do, to the point, frequently, of burning them out. And, because so many staff people at EPA are committed, they tend to overpromise, to bite off more than they can chew."

minute quantities of substances feared to be harmful to human health.

Congress has responded by making EPA responsible for implementing a complex set of laws to protect human health by controlling such exposures. The agency often comes under fire—unfairly—for failing to accomplish its goals with optimum efficiency. Nonetheless, it is being asked to perform Herculean tasks, and some resolution must ultimately be reached about what government can reasonably be expected to accomplish. Above all, our society needs to come to terms with the issue of what degrees of what kinds of risks are acceptable, and at what price.

EPA must play the honest broker among legitimate competing societal concerns. Insufficient knowledge cannot justify failure to act, so the agency must constantly operate in the context of scientific uncertainties. There is a growing gap between EPA's obligations and authorities and its ability to deliver satisfactory results by traditional

administrative means.

To fulfill its mandates, EPA does need increased resources far beyond the 1981 levels to which Congress has recently barely restored it. But even a substantial infusion of money and staff will not of itself get the job done, and increases of any notable magnitude are unlikely in the face of competition for finite government resources for other pressing social needs.

The agency needs to draw on two invaluable internal assets: the spirit of dedication and professionalism that characterized its employees throughout the first decade of the agency's creation and maturation, and a renewed resolve to tap the best minds in the scientific, business, academic, and political communities to devise better ways of achieving environmental goals.

EPA must consistently be its own sternest critic, always evaluating whether it is using the most effective means to attain its ends. The agency needs, for example, to examine and adopt innovative approaches—such as

using private sector auditors, inspectors, and certification processes—to maximize the resources that government can directly bring to bear. It needs to deal creatively with non-technical problems, such as liability issues. It must re-engage in intensive public education efforts to frame complex scientific/technical issues so that people can make informed judgments about managing risks in our society. It needs to restore decimated government research programs and to stimulate new non-governmental efforts to realize answers to the unknowns confronting us.

Living on the razor's edge is never comfortable, but whoever promised anyone in public service any kind of garden? EPA does, indeed, live in interesting times, and that is its only constant prospect in this age of change and challenge.

These are classic, text-book management problems.

Finally, in regard to weaknesses, there is the problem of priorities. EPA operates under a set of commands from the Congress, commands which have been written into the law. Once they exist, they must be answered, even if changing times result in changing priorities. There has always been—and I hope always will continue to be—within EPA a conflict between what we are required to do and what we would like to do. But that conflict, if properly managed, can result in a healthy working atmosphere. I believe we established, in my 22 months, an effective way of meeting our statutory requirements while being mindful of priorities.

As for strengths, it must be mentioned first of all that EPA is still a very young agency with a very high degree of commitment. And that makes it a very exciting place to work. It is full of new ideas. But the same youthful enthusiasm and commitment can be a "positive-negative." (Indeed, EPA is filled with positive-negatives, which is not at all a bad thing, even if it does create internal conflicts.)

During my time at EPA we instituted four changes which I feel are all definitely "strengths." They are: 1) the management system, whereby we made sure people knew what they were to do and to whom they were responsible; 2)

the peer review system, which enabled us, for example, to take Superfund from a piece of paper recently passed into law to a full-blown federal program; 3) the revamping of the enforcement system, a highly controversial change that nonetheless allowed the agency for the first time in years to speak with a single voice, and to return to a proper attorney-client relationship; and, 4) the budgetary hearings procedure, which for the first time in EPA history gave the Administrator direct involvement in the agency's various budget decisions, with the result being better environmental results for the money, or, even, for less money.

It should be remembered that I came to office as part of a new Administration that brought a different approach to solving the problems of government. One of the tenets of that approach was what we called New Federalism, or the idea that there were any number of services being provided by Uncle Sam that could be better provided by the states themselves. Under that theory, while at EPA, we were the only agency in Washington that was truly practicing New Federalism. The amount of delegation we accomplished in 22 months was truly enormous. And with each delegation we increased the manpower in the country dedicated to environmental protection.

All of these changes, I am proud to say, remain in effect today, and continue to prove their worth.

I don't mean to sound parochial, however, by mentioning only those strengths which my people and I introduced. There was a lot of fundamental good in EPA when we arrived, and it remains.

As a long-time career person at EPA told me recently, "When we tackle a problem, there are few agencies in town that can tackle it as well as we can. For example, I think we came to terms with the problem of asbestos in the schools more quickly than anybody else could have."

If pressed to name EPA's greatest strength, I would have to say that its real strength is the fact that the agency's mission enjoys enormous popular support among the people of America.

I think all of us who have ever worked for EPA can be proud of the accomplishments of the last 15 years, especially in the areas of air and water. And now there is also a strong Superfund program in place (the funding for which will most certainly be extended and increased). But I would be remiss if I didn't mention my fears about how EPA is dealing, through RCRA, with the problem of waste.

Paradoxically, waste represents both EPA's greatest strength and its greatest weakness: we have done a fine job of cleaning it up, but a poor job of preventing it. That is EPA's challenge for the future. □

# EPA's Achievements: Some Highlights

EPA's achievements over the past 15 years add up to a cleaner, healthier environment for the nation. Here are some highlights:

In the 1970 amendments to the Clean Air Act, Congress directed EPA to establish programs to control air pollution to protect human health. Major research, control technology, regulatory, and monitoring initiatives were implemented in cooperation with state and local authorities to reduce emissions of the six criteria air pollutants: particulates, sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide, and lead. For each pollutant, EPA established a standard to protect people against the adverse health effects associated with high concentrations of these air pollutants. The standards are known as National Ambient Air Quality Standards (NAAQS). Reliable data on how much progress is being made in reducing the amount of these harmful pollutants in the air has been collected and analyzed since 1975.

Overall on a national basis, substantial progress has been made. Between 1975 and 1983, average ambient concentrations of particulates have declined 20 percent; sulfur dioxide has declined 36 percent; carbon monoxide has declined 33 percent; and lead has declined 67 percent. Ambient concentrations of nitrogen dioxide have remained about the same, and while ambient concentrations of ozone have declined 8 percent, on a national basis, average concentrations of ozone exceed

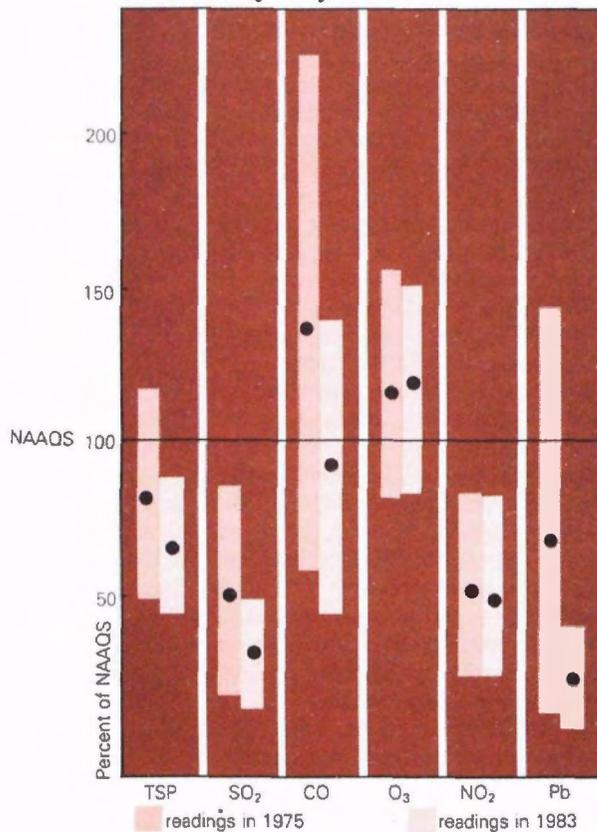
the national standard and ozone remains a very serious air pollution problem. (Much of the decrease in ozone appears to be due to a calibration change in the monitoring equipment in 1979.)

In each column of the "Air Quality Trends" chart below, the upper limit of the light area represents the average for the most polluted sampling sites and the lower edge marks the average of the cleanest sampling sites.

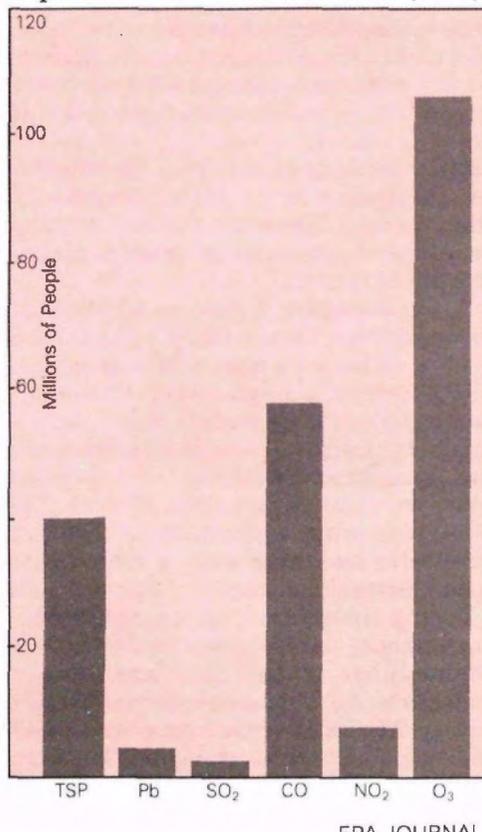
Except for ozone, the average for all sites (located by the ●) has been brought below the NAAQS. Nevertheless, the amount of light area extending above the standards line shows considerable work yet to be done.

A rough estimate of the number of people exposed to "unhealthy" air is shown below, also indicating the job remaining. Note that 46 percent of the U.S. population resided in counties where the ozone (O<sub>3</sub>) standard was exceeded.

Some Air Quality Trends



Exposure to Below Standard Air (1983)



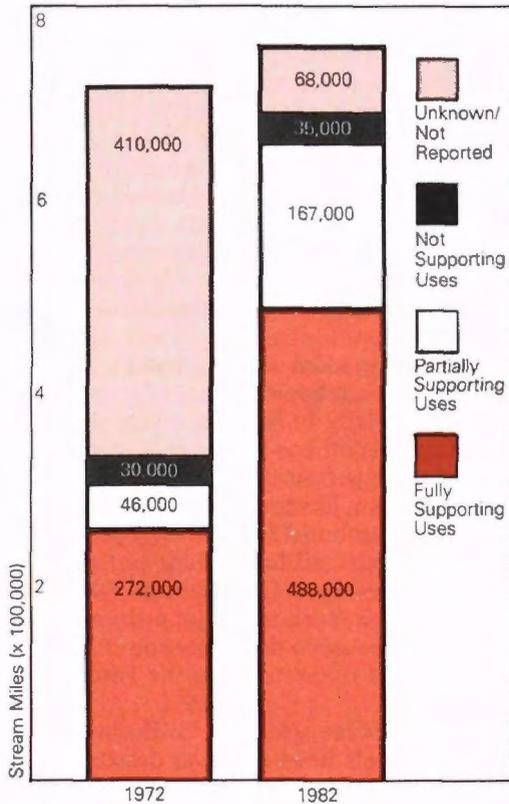
## WATER

The Clean Water Act is designed to clean up and maintain the quality of the Nation's rivers and streams. EPA works with states to adopt water quality standards; establish limits on pollutant discharges by industries and municipalities into rivers and streams; develop permits and enforce discharge limits; and fund municipal treatment works.

A key to the surface water pollution control program is the state designation system. States classify rivers and streams by use, which range from support of cold water fisheries and swimming to irrigation or industrial cooling. This system identifies pollution control actions required to meet and maintain the waterbodies' designated uses.

Progress has been made in ensuring that waterbodies meet their designated uses. The chart below depicts changes in designated use between 1972 and 1982 for 758,000 miles of the estimated 1.8 million miles of U.S. rivers and streams. In this 10-year period, 296,000 stream miles were reported to have maintained the same level of water quality; 47,000 miles improved; and 11,000 miles degraded. Additionally, pollutant discharges from municipal plants are estimated to have decreased 46 percent and a billion pounds of toxics are removed annually due to EPA controls.

Meeting Designated Stream Uses

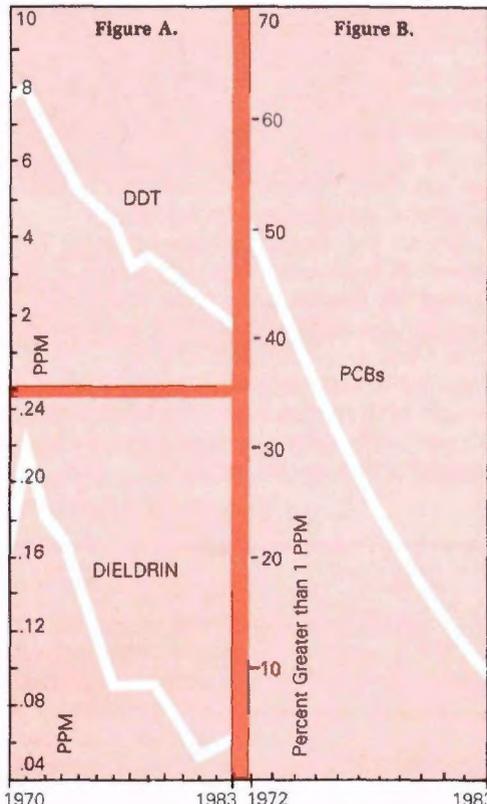


## PESTICIDES and TOXICS

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) provides EPA with broad authority to regulate pesticides. New pesticides are subject to rigorous testing prior to their use. For existing pesticides, the agency has implemented an intensive review to ensure that they have been adequately tested and to eliminate uses that pose unreasonable adverse effects. For example, in the 1970s following the amendments to FIFRA, the agency took action to cancel the major uses of DDT and dieldrin. As Figure A shows, the levels of these pesticides found in human fatty tissue have significantly declined.

Under the authority of the Toxic Substances Control Act, EPA began phased regulation of polychlorinated biphenyls (PCBs) in the mid-1970s. In sum, EPA prohibited the manufacture of PCBs, restricted their processing and distribution in commerce and use; regulated certain PCB electric equipment to reduce risks from exposure to PCBs and combustion byproducts during fires; and required their proper disposal. These controls on PCBs from manufacture through proper disposal have resulted in significant reductions in PCB levels in human fatty tissue (see Figure B).

Decline of Some Chemicals in People



## SUPERFUND

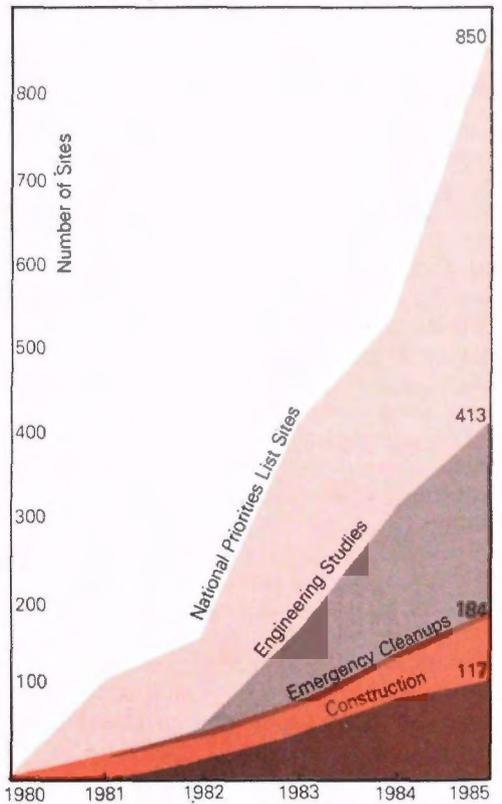
Under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("Superfund"), EPA has the responsibility for cleaning up abandoned or uncontrolled hazardous waste sites. Since 1980, over 21,000 sites have been inventoried and more than 14,000 preliminary assessments have been completed.

In 1981 there were 115 sites on the National Priorities List (NPL). The number has grown to 850 today. At 413 sites, engineering studies have been started and final design engineering or construction activities are underway at over 100 sites.

In addition to the long-term remedial cleanup actions, EPA has also completed over 583 removal actions, 184 of which were at NPL sites. These are typically sites where an "immediate threat" is posed to human health or the environment. They may require up to six months to complete and cost up to \$1 million.

Using Superfund's enforcement authorities, the agency has reached agreements with responsible parties to initiate privately financed cleanup actions valued at over \$480 million. Moreover, EPA has recovered over \$21 million in cost recovery actions from responsible parties.

Cleaning Up Superfund Sites



# History as Seen by the Regional Administrators

On the occasion of the fifteenth anniversary of the agency, the EPA Journal asked EPA's Regional Administrators to look back and reflect on what achievements stand out in their region. The magazine received a variety of responses and they are printed here.



by Michael R. Deland  
Region 1

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*The Atlantic salmon has returned to some rivers for the first time since George Washington's day.*

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Over the past decade and a half, we have witnessed in New England a grassroots revolution against environmental degradation. State and federal lawmakers and civil servants, citizen groups, business and industry, and thousands of caring and dedicated New Englanders are the "militia" that turned things around. The formation of this loose but powerful coalition is the single greatest achievement I have seen since 1970 when EPA was born.

The accomplishments of this coalition are all around us. Levels of most air pollutants have dropped markedly despite doubling and tripling of major pollution sources. Five of six New England states are now inspecting motor vehicles for emission controls or actually testing emissions. Sulfur dioxide trouble spots have been all but eliminated. Working with industry, our states have developed new processes to

reduce or eliminate some hydrocarbon emissions.

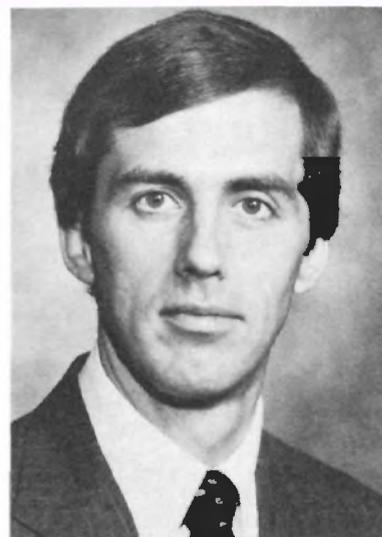
In 1970, less than 30 percent of our major river mileage was suitable for fishing and swimming. Today the figure is 80 percent. Beaches and shellfish beds are reopening along the coast, and the Atlantic salmon has returned to some rivers for the first time since George Washington's day. Among the remaining 20 percent of river mileage are small streams dominated by industrial effluent and municipal sewage. Here industry is striving to clean its effluent to standards more strict than those for drinking water.

Boston Harbor has been grossly polluted for more than 20 years, but a new Massachusetts Water Resources Authority has been created to attack the problem, and a federal judge in Boston has agreed at EPA's behest to enforce cleanup schedules in the \$2 billion repair and construction project that lies ahead.

We are gaining control over the frightening mismanagement of toxic substances and hazardous waste, and correcting waste disposal errors of the past. EPA, the states, and responsible companies have started cleanup or preliminary work at 46 New England Superfund sites, and 36 emergency cleanups have been completed at Superfund sites and other toxic waste dumps.

Good things are happening because the "militia" of citizens, industry, and state government wants progress and is willing to work cooperatively to achieve it. What was the key decision on the part of Region 1? A succession of politically appointed regional administrators each decided to be led, not by political considerations, but by the advice of career professionals based on sound science and technology.

Not all the decisions have been universally popular, but they have earned for Region 1 the trust and public cooperation without which there would have been no revolution and no progress. I thank my colleagues, the people of New England, and their state governments. May the next 15 years be as productive as the last.



by Christopher J. Daggett  
Region 2

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*Some of the greatest strides have been made in the war against water pollution caused by municipal sewage discharges.*

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Cleaning up environmental problems anywhere is a challenge. Producing results in New York, New Jersey, Puerto Rico, and the Virgin Islands—among the most populated areas in the nation—is a complex battle.

Looking back over the past 15 years, Region 2 can claim some major successes. Some of the greatest strides have been made in the war against water pollution caused by municipal sewage discharges. With impetus from the 1972 federal Clean Water Act, Region 2 has provided more than \$6 billion in funds to various municipalities for sewage treatment programs.

Perhaps the most striking results of those funds can be seen in the Hudson River, especially in its harbor area. More than \$2.6 billion has been spent to date to treat sewage from New York and New Jersey. In New Jersey, communities used that money to build four plants that treat about 379 million gallons of municipal sewage daily. Another 70 plants in New York treat 593 million gallons of sewage a day that would have been spewed untreated into the Hudson River.

The results are startling. Coliform bacterial levels have dropped drastically

*A view of the Hudson River from West Point, N.Y. Progress has been made in cleaning up pollution of the Hudson.*

due to treatment, preserving the safety of the Hudson's waters for people and fish. With tons of pollutants gone, oxygen levels have improved, luring striped bass, white perch, tomcod, and bay anchovy back to the harbor where they are propagating actively again. Even shellfish beds have reopened in the Atlantic south of Rockaway Peninsula.

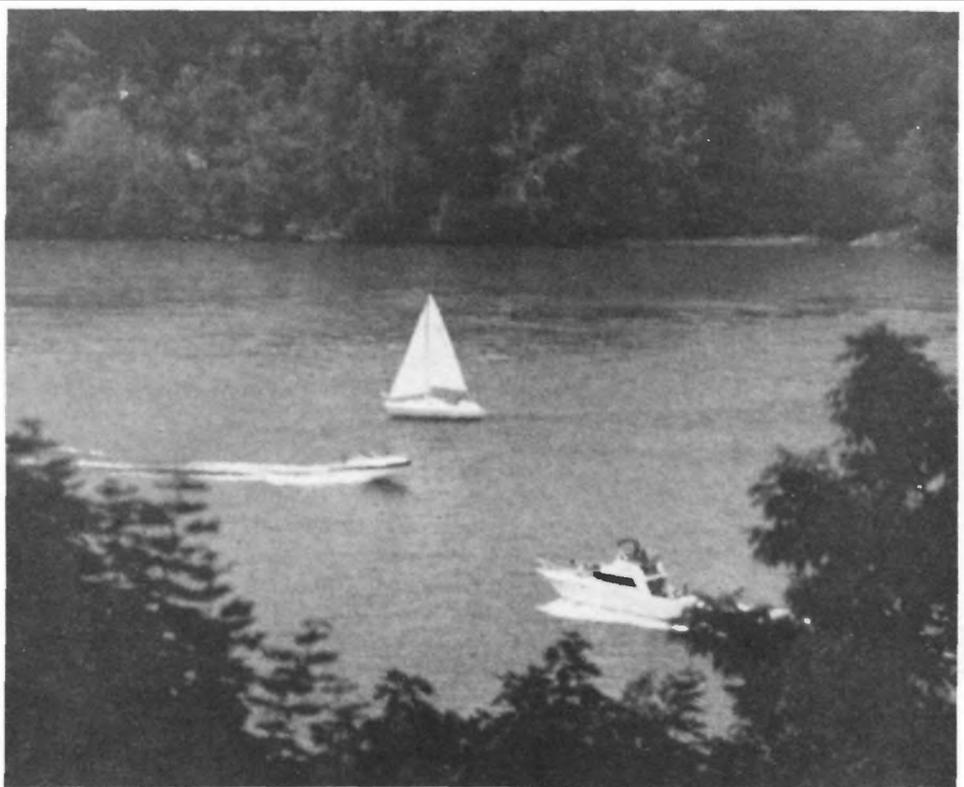
The cleanup also means the beginning of a renaissance for New York harbor beaches. For example, Midland Beach on Staten Island reopened about five years ago. Even more beaches in the greater New York-New Jersey metropolitan area are expected to reopen within the next few years as pollution abatement programs continue.

Some of those beach reopenings will come on the heels of a major advancement in the water quality of a seven-mile stretch of the Hudson. The water quality standards for the area, spanning from the northern tip of Manhattan to just south of the Tappan Zee Bridge, have been upgraded to fishable and swimmable levels as a result of improved waste treatment on the river.

Another more visible and massive sign of improvements to come for the Hudson River is the North River Sewage Treatment Plant near the George Washington Bridge. Starting this December, the North River project will treat some 180 million gallons of sewage generated daily in Manhattan.

While tremendous progress in water pollution control has been made over the years, many challenges remain. Our programs to curb conventional pollution in the Hudson River are being fortified with more recent efforts to identify and control toxic chemicals.

Region 2 has kicked off an aggressive program to pretreat industrial waste waters—especially those contaminated with toxics—before they ever reach municipal sewage treatment plants and slip into the Hudson. This program represents a major effort for EPA Region 2 in the next decade.



*N.Y. State Dept. of Commerce*



by James M. Seif  
Region 3

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*Region 3 has had a history of responding to environmental emergencies long before Love Canal and Superfund became household words.*

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EPA's Middle Atlantic Region has improved the quality of the environment immeasurably through its emergency response activities. In fact, Region 3 was responding to environmental emergencies long before

Love Canal and Superfund became household words.

In the early and mid-1970s, Region 3 participated in the cleanup of a number of tanker accidents on the Delaware River and the devastating aftereffects of tropical storm Agnes. These emergencies required the cleanup of hundreds of thousands of gallons of oil and chemicals.

In the late 1970s, our region also dealt with hazardous waste emergencies under the oil spill cleanup provisions of the Clean Water Act (CWA). For example, the contamination of a warehouse in Youngsville, Pa., by PBCs was first addressed using CWA emergency funding. Later, Superfund money was used to complete removal of contaminated soil and the monitoring of ground water.

Since the passage of Superfund, Region 3 has been one of the nation's leaders in quickly addressing hazardous waste problems through use of the emergency provisions of the law. Region 3 will soon reach its one hundredth Superfund immediate removal action. To date, this has included the removal of 12,600 drums, 31,700 tons of contaminated soil and sludges, and over 1.2 million gallons of hazardous substances. Details such as these are often overlooked in accounts of Superfund accomplishments.

All these activities have not only had a positive impact on the environment, but have also helped to shape the public's perception of EPA as an agency that can be looked to for help in emergencies.



by Jack E. Ravan  
Region 4

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*By 1973, the body of water was well on its way to being once again a functioning estuary.*

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In Florida's Escambia Bay during the late 1950s, fishing nets were filled mainly with slimy growths, a variety of wastes, and very few fish.

Into the 1960s, fish kills abounded and the estuary at Pensacola received nationwide attention. News pictures of piles of dead menhaden and other fish species were not uncommon.

Enrichment of the bay created algae blooms which fostered millions of fish. However, during critical conditions the same algae caused lowered dissolved oxygen which suffocated the fish.

Through the efforts of Florida's regulatory agencies and predecessor agencies of EPA, efforts were undertaken to reduce the industrial waste being discharged into the estuary. These efforts were successful, and by 1973, when Region 4 sent its Escambia Bay Recovery Study team to evaluate the estuary and recommend recovery programs, the body of water was well on its way to being once again a functioning estuary.

Industrial discharges no longer were rendering fishing nets useless and desirable sport fish were beginning to move back into the river and bay system. Young striped bass were placed in the river to see if a viable fishery could be established. They survived and provided a long desired sport fishery. There is optimism that continued improvement will lead to a

self-sustaining fishery of striped bass.

Also, the team studied the demise of seagrass beds which took place during the 1940s and 1950s, using photographs furnished by the Florida Department of Transportation and previous studies by state scientists. During the 1973 study by Region 4, the recovery team found that seagrasses were beginning to increase in the estuary.

Recent reconnaissance of the system indicates an even greater expanse of seagrasses, with coverage of several acres in at least three areas. Fishermen are trawling for shrimp for the first time in many years, and there is a blue crab fishery throughout the system.

Although Escambia Bay is recovering, new problems are emerging in the form of commercial development and housing along the shoreline. A concerted effort must be initiated to counter this threat to the water quality of the estuary.



by Valdas V. Adamkus  
Region 5

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*Our efforts have led people to realize that there is no "away".*

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EPA's fifteenth anniversary affords us a unique opportunity to, Janus-like, reflect on where we've been and where we've yet to go. The first 15 years have been a period of idealism, turmoil, and growth highlighted by an evolving appreciation for the complexity of the problems we face and the development of an increasingly sophisticated array of tools to deal with them.

In our first 15 years, we found that

addressing the obvious issues served only to pull back the curtain and reveal the enormity and complexity of the task still ahead. Concerns about parts per million have paled as we find our detectable limits moving to parts per billion and even parts per quadrillion.

As the power of our science increases we are made even more aware of how all environmental problems overlap. Unlike in our early years, we can no longer treat problems from the perspective of a single medium. Air, water, waste, and toxics are no longer single-issue or single-source problems. We have had to become more sophisticated in the way we deal with them.

Hence, our most important accomplishments over the last 15 years have not been the cleaning of particular rivers or communities. Rather, our major achievement has been learning to use and develop tools that will serve us over the next 15 years as we deal with environmental problems that are more complex and interwoven.

The enormity of the task still remaining will require an active leadership role by the states. In Region 5, the concept of state-federal partnership embodied in the very early legislation has been aggressively pursued by both the states and the regional office. As the states have acquired the necessary program capability, they have been delegated more control over the structure and direction of environmental programs.

But our states have done more. They have been innovators in a wide variety of programmatic and administrative areas. The willingness of our states to assume the responsibility for environmental management has been a major factor in the successful environmental programs of the last 15 years.

This willingness to take on active leadership roles comes from an understanding in Region 5 that our economic well being is inextricably linked to the health of the environment. We have learned that we need not be forced to choose between jobs and the environment. We want and can have both.

But perhaps the biggest impact which we and the states have had is on the people we serve. Our efforts have led people to realize that there is no "away". The environmental problems we face can't be shipped downstream, downwind, or down the road. As Pogo declared years ago, "We have met the enemy and he is us."

In the coming 15 years this sense of

community and responsibility for cooperative efforts to solve common problems must be sustained if, at the year 2000, we are to be able to look back and see the kind of progress which we see today.



by Dick Whittington, P.E.  
Region 6

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*The referrals were of such quality that they stand as examples for other regions to follow.*

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Vinyl chloride was listed as a hazardous air pollutant by EPA under the Clean Air Act in 1975. This cancer-causing substance was one of the first substances so listed. National emission standards for vinyl chloride were set in 1976.

Subsequent EPA studies showed that almost 50 percent of the operating vinyl chloride plants in the nation were located in EPA's Region 6 area (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas).

In early 1982, the region began a major vinyl chloride enforcement program to bring these plants into compliance with the standards.

During the following year and a half, Region 6 staff evaluated the data on file, obtained additional information from industry, coordinated numerous policy decisions with its Washington, D.C., counterparts, and developed necessary technical and legal documents for referring cases to EPA Headquarters and the Department of Justice for litigation.

The referrals were of such quality that they stand as examples for other regions

to follow—and Region 6 often is consulted by other regions about case preparation.

As of August 1985, 15 vinyl chloride cases, based on referrals from the region, had been filed in various district courts—13 in Louisiana, one in Oklahoma, and one in Texas. Five cases have been settled, producing a total of \$800,000 in fines. Fines ranged from \$50,000 to \$625,000.

Since the first regional case was filed in July 1983, the states have taken a more aggressive enforcement stance, and there has been a marked decrease in vinyl chloride relief valve discharges. For example, one company dropped from 40 such discharges between 1980 and 1983 to four between 1983 and 1985. Another company dropped from ten to two such discharges during the same period.

Region 6 is continuing its aggressive vinyl chloride enforcement program and is expanding the program to cover other hazardous air pollutants.



by Morris Kay  
Region 7

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*Charcoal kilns no longer spew forth the heavy clouds of particulates that hung low in the Ozark Mountain valleys.*

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Environmental quality changes usually evolve almost imperceptibly and are often hard to measure, but in the late 1960s and early 1970s the outfalls below large meat packing plants located in Omaha, Neb., and Council Bluffs, Ia., ran red with blood and offal. Large grease balls clogged water intakes many

river miles below the plants on the Missouri River. Farther west, runoff from huge cattle and swine feedlots ran unchecked into small streams and rivers, killing literally thousands of fish.

Enter EPA. With the aid of the states, regulations were developed to control runoff from feedlots. Effluent guidelines were established for the meat packing industry and the effect on water quality in Region 7 has been dramatic.

Not so obvious has been the considerable improvement in air quality in the region during the last 15 years. Charcoal kilns no longer spew forth the heavy clouds of particulates that hung low in the Ozark Mountain valleys. Fugitive dust from the sentinels of the plains, the grain elevators that dot the countryside across the region, is now captured before it escapes to the environment. Emissions from lead smelters have been reduced significantly, and the quality of air in those areas is markedly improved.

Open, burning dumps have virtually been eliminated in the region. Dumps that have been closed are monitored closely to detect any leaching that may pose a threat to that precious natural resource, ground water. Nearly 80 percent of the drinking water supply for the entire region comes from ground water. In most instances, it's good, clean, sweet water and every effort is being made to keep it that way. Ground-water protection continues to be a high priority in the region.

Nearly five years ago one of the most complex environmental problems the region has ever faced began to emerge. Dioxin contamination has now been confirmed at more than 40 sites in Missouri. Refinements in sampling techniques, grid sampling to assure acceptable cleanup levels, quality controlled and quality assured data, and community relations techniques are just a few of the experiences we have to share with other regions from this extremely resource-intensive effort.

Perhaps the most exciting environmental achievement, and one that has not only regional and national implications but international impact as well, is the successful destruction of dioxin in the field by the agency's mobile incinerator. Man had created this unwanted byproduct, dioxin, but not until this year in a remote rural area of northern Barry County, Mo., did the mobile incinerator prove that man could indeed, destroy this toxic chemical successfully and safely. Truly an environmental achievement.



by John G. Welles  
Region 8

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*Region 8's most significant contributions to environmental protection are the ways we get the job done.*

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On October 1, 1971, EPA's Region 8 was non-existent. But by mid-month, a crew of almost 45 had started shaping the process of environmental protection in the Rocky Mountain Prairie Region. During the years since, Region 8 has felt growing pains, stretched, grown stronger, and had many environmental successes. While single actions or accomplishments are vital in gauging environmental protection, we believe that Region 8's most significant contributions to environmental protection are the ways we get the job done.

The major way we get the job done is through partnerships with states in accordance with national policy. This integrated approach to environmental management is complex, and it is not always easy. But, better than anything else we know, given good communication and good will, it works.

Coupled with our state/EPA agreements, enforcement agreements and tribal agreements, state delegation is the firm foundation on which environmental protection is supported and carried out in Region 8. While we take our oversight role seriously, we believe the most environmentally beneficial way to work with our delegated states is as responsible partners.

Cooperative processes also greatly facilitate environmental problem-solving in the region. For example, contamination believed to have originated from a part of the Lowry Landfill east of Denver threatens a local aquifer. A task force established by the Governor of Colorado in 1980 and moderated by the League of Women Voters is the forum through which the many interested parties are working toward solutions: city, county, state and local agencies, an estimated 200 potentially responsible parties, neighborhood associations, and local and national citizen advocacy groups. Recently, Clean Sites, Inc., was engaged by private parties to assist in efforts to apportion costs. Before these cooperative processes were in place, progress was eclipsed by confrontation.

Another example: a situation involving an estimated 4,000 people in a Denver suburb began to unfold in 1982. An unusually high number of cancer cases apparently existed in area children. Some residents feared another Love Canal and requested EPA help. Within weeks, EPA, state and county health departments, area and national advocacy groups, and Congressional representatives linked together to attempt to identify the cause of the cancers. Although several months of extensive investigation found no environmental cause for the disease, the lingering fear that exposure to some unidentified contaminant triggered the disease was removed because the investigation had credibility. This case demonstrated how combined efforts for environmental fact-finding and understanding can produce results acceptable to all in the problem-solving process.

The challenge to protect the environment will not grow easier. As population and tourism grow in the mountain states, the need for environmental protection will expand proportionally. In the final analysis, successful delivery of environmental services in the future will depend on dedicated people both within EPA and in organizations with which we work closely to get the job done.



by Judith E. Ayres  
Region 9

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*Supported by EPA's resources and technical skills, the state-managed construction grants program has yielded major water quality payoffs.*

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Region 9 takes great pride, at this fifteenth anniversary of EPA, in the attainment of a highly productive state/EPA partnership in environmental management. This successful program grew out of the 1970s' sudden population growth, dynamic economic and technological changes, and environmental challenges undreamt of 15 years ago.

While the public was demanding increased federal programs to contend with omnipresent environmental issues, the availability of resources did not increase to meet those demands if we were to continue to operate in a centralized federal mode.

A shift to shared management became an option for meeting Congress' and EPA's imperatives for environmental protection. Program delegation to the states was seen as one solution to the environmental challenges.

Over 15 years, delegation agreements between the regional office and states were fostered and developed. We saw delegation as strengthening programs at the state and local levels. By making federal resources available to the players close to conditions within their states, we were able to respond more quickly to the environmental concerns and priorities of an awakening public awareness.

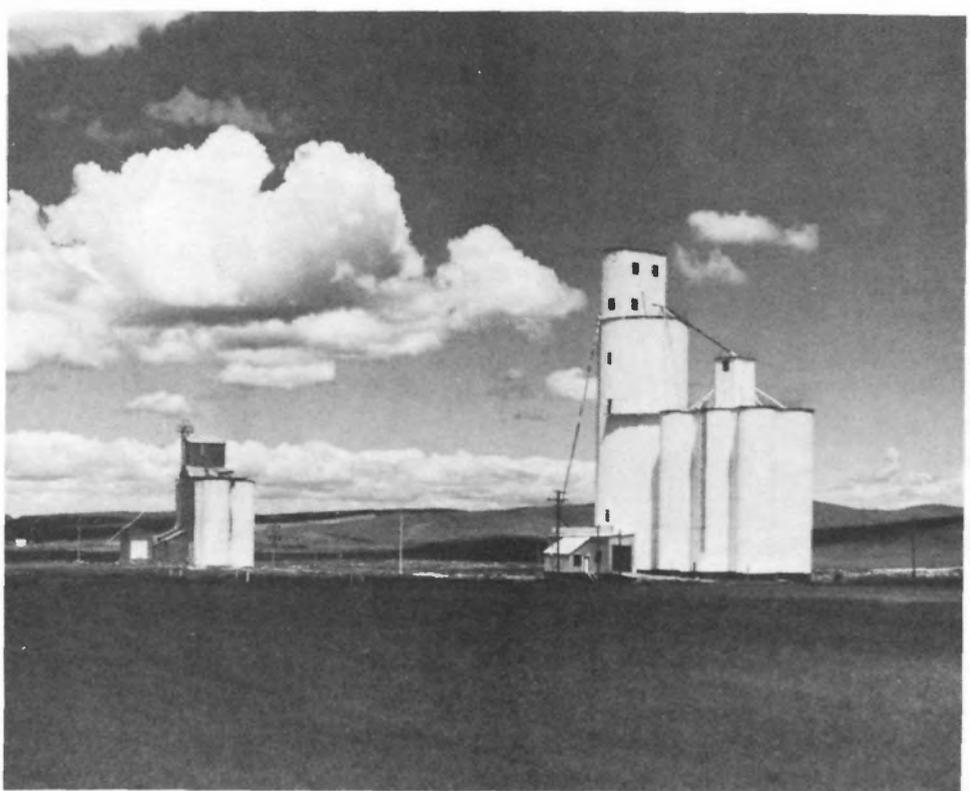
*Fugitive dust from grain elevators like these can be captured before it reaches the environment.*

The pioneering delegation to California of the construction grants program in 1972, and, by 1982, to all of the states in Region 9, established a precedent-setting national model. This single event symbolizes and validates the inherent strength of our states.

The effectiveness of Region 9's delegation program is demonstrated by the fact that about 80 percent (more than \$3.5 billion) of all construction grant funds Region 9 has provided to its states under the Clean Water Act have been obligated through the delegation process.

Supported by EPA's resources and technical skills, the state-managed construction grants program has yielded major water quality payoffs: the preservation of pristine Lake Tahoe, the revitalization of the American River and other recreational waterways, and the protection of our West Coast beaches, bays, and marine ecosystems.

From the construction grants program has emerged the concept of delegation as a tool for creating federal/state partnerships to implement environmental mandates. By utilizing our combined resources to forge an effective operating partnership, Region 9 has provided the environmental leadership to advance state pollution control programs. EPA and the states have made significant progress together in cleaning up our air and water and in protecting and preserving the natural systems which create the beauty of the Pacific Southwest and sustain its people.



USDA, Soil Conservation Service



by Ernesta B. Barnes  
Region 10

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*Throughout the region, the pattern of enforcement established back in 1977 continues to this day.*

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If there has been a single moment in the past 15 years when the environmental movement fully came of age in the Pacific Northwest, it was on the October afternoon in 1977 when a U.S. District Court judge in Seattle ordered two Puget Sound pulp mills to comply with the terms of their

wastewater discharge permits issued by the State of Washington.

The two mills were among the last of the pulp mills in the Pacific Northwest which had failed to meet the July 1977 deadline for adhering to the discharge requirements of the Water Pollution Control Act Amendments of 1972. Lawyers from EPA and the U.S. Attorney's office had gone to court to insist that the national effluent limitations for pulp mills were to be obeyed by all members of that industrial category.

The judge's ruling—and subsequent agreements by all Puget Sound mills to pay more than \$1 million in penalties for missing their permit deadlines—not only upheld the law, but also demonstrated that EPA could work successfully with the U.S. Department of Justice to fulfill the law and to protect the environment.

Nowhere in the Pacific Northwest has this teamwork been more evident than in efforts to preserve Puget Sound. This year, for example, through efforts of EPA and the U.S. Attorney, criminal convictions—producing jail terms and penalties in excess of \$1 million—were obtained against a Seattle corporation and its officers for discharging hazardous waste into Puget Sound.

Throughout the region, and for all the laws EPA administers, the pattern of enforcement established back in 1977 continues to this day. □

# The Light Touch: A Selection of Cartoons



"How should I refer to you in my chronicle, as the discoverer of fire, or as the first man to pollute the atmosphere?"  
 Shirvanian, 1983, in AU'DUBON Magazine.



Draper Hill, 1973, in The Commercial Appeal (Memphis).



"Pssst! dump your toxic wastes?"  
 Shirvanian, 1984, in AU'DUBON Magazine.



"THEY MUST BE INTELLIGENT! THEY NEVER LAND."  
 Ashley, 1974, THE TOLEDO BLADE.



"...HELLO-CONGRESS?... LISTEN, I NEED 8 DOLLARS AND 57 CENTS QUICK OR THE LEOTARD GOES BACK TO THE COSTUME SHOP!"

Willis, 1985, Dallas Times Herald.



Herblock, 1975, in The Washington Post.

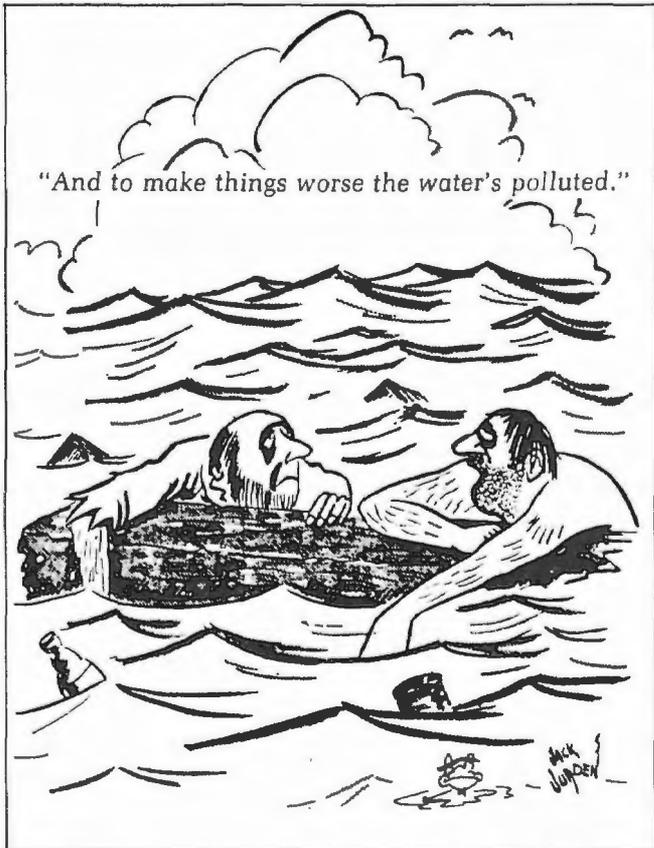


Oliphant, 1970, in the Denver Post



"Don't you love being miles from anywhere, all cozy by the fire, listening to the gentle pitter-patter of sulfuric acid on the cabin roof?"

Reprinted by permission of AUDUBON Magazine and Henry Martin. ©Henry Martin, 1981



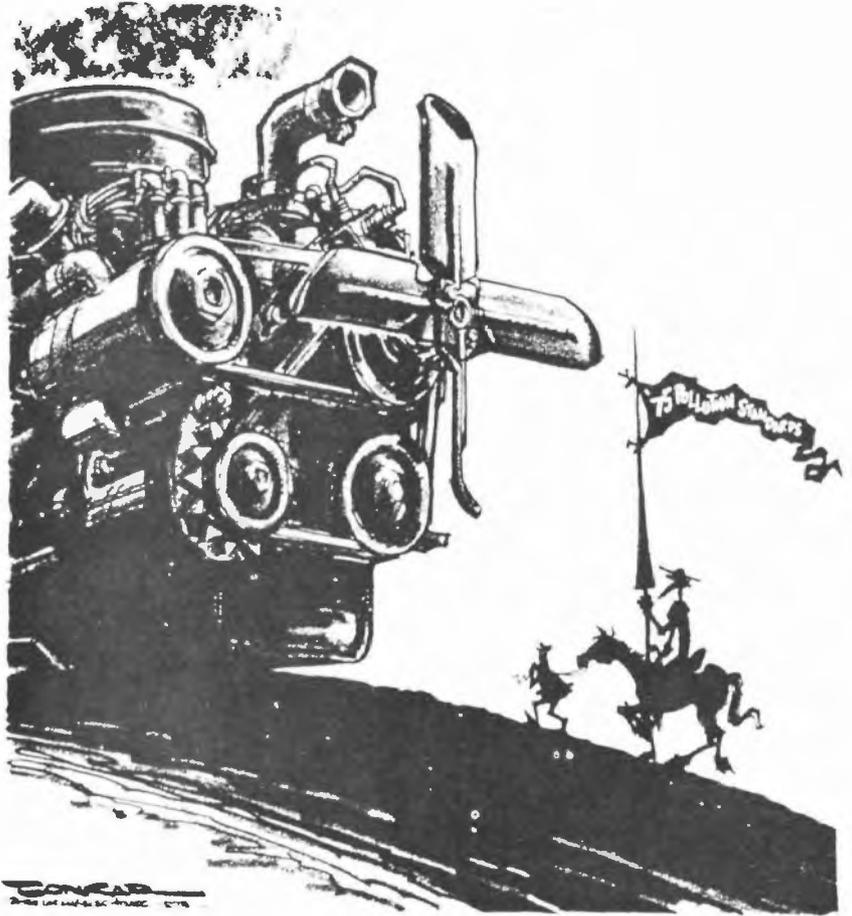
Jurden, 1974, in The Wilmington News-Journal.



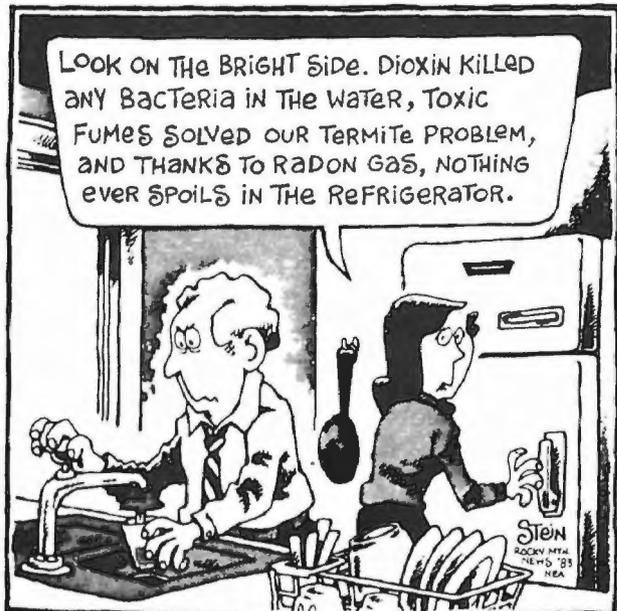
Mariette, 1979, The Charlotte Observer.



LePelley in The Christian Science Monitor ©1973 TCSPS.



Paul Conrad, 1979, Los Angeles Times. Reprinted with permission.



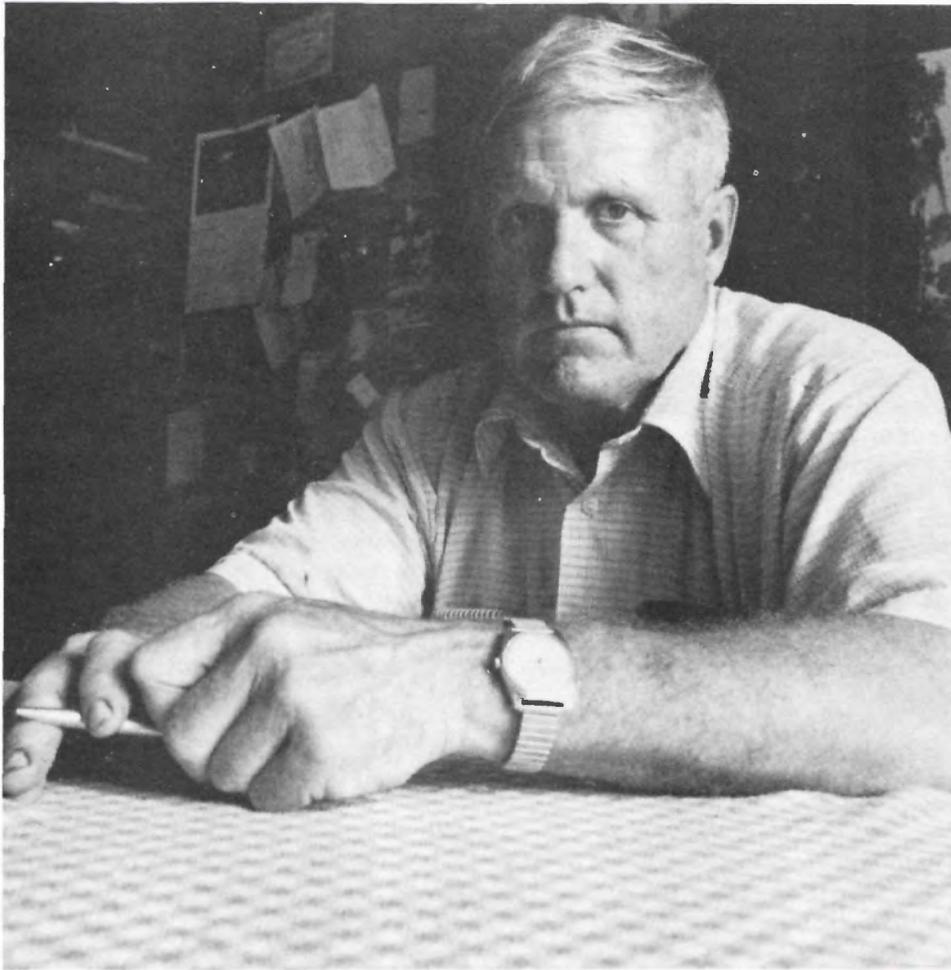
Stein, 1983, in the Rocky Mountain News.



Branch, 1982, in The Express-News (San Antonio).

# In the Public's Eye

Photographs by Mary Ellen Guay and Steve Delaney



Butler

## George H. Butler, Jr.

Farmer  
Germantown, Md.

Scare groups affect EPA more than they should. And the farmers don't affect them enough.

For example, there's a big scare now about Alar, the material sprayed on apples to make them get ripe sooner. Somebody's come out and said that if you eat apples that have Alar on them, you're one hundred times more likely to get cancer. Somebody's done some research, but it really hasn't been followed through. But it will still scare some people away from eating apples. It just kills your business.

We're required to take a course and pass a test to use restricted pesticides, and I think that's good. We probably handle the materials a little more carefully for our own safety.

The bottom line is, nobody wants to eat fruits or vegetables with worms in them, but nobody wants to eat any chemicals either.

## Gale Bradford

Photo shop operator  
Weatherford, Tex.

We need a "watchdog," so to speak. EPA has made strides, insofar as trying to determine if the air is healthy to breathe, et cetera. But I also feel that EPA probably doesn't act on the information that it gathers. I feel there are many, many situations that happen every single day, that probably the agency is aware of but doesn't take care of, doesn't act on. No one wants to hurt industry.

## Bill Yeager

Retired  
Weatherford, Tex.

EPA should be congratulated on the progress it's made in cleaning up the water, especially in the polluted streams where the fish are dying. I know there's more to be done. I think they should keep on. We need to have the cleanest water in the whole United States right here in Texas.

For several years, this magazine has been reporting to the public the accomplishments of the Environmental Protection Agency. On the occasion of the agency's fifteenth anniversary, we turned the tables and asked the public to report to us.

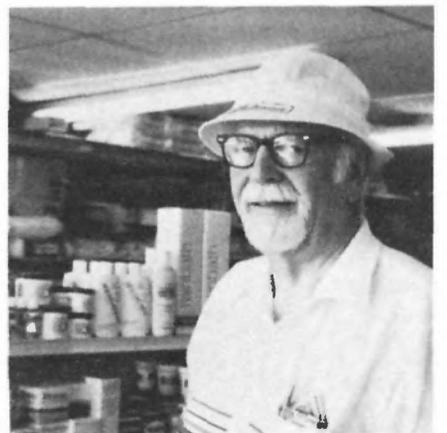
Three members of the EPA Office of Public Affairs—Mary Ellen Guay in Dallas, Dave Pickman in Boston, and Susan Tejada in Washington, D.C.—hit the streets to ask people the following question:

**What do you think the Environmental Protection Agency has accomplished in 15 years?**

Here is what the people answered.



Bradford



Yeager

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**Margaret Chung**

Secretary  
Alexandria, Va.

The exhaust from cars still makes the air filthy. There's still some work to be done in that area.

I eat a lot of fish. I do worry a little bit about that. EPA should keep the rivers clear of toxic elements. But I still eat the same amount of fish. That's my favorite dish, you know.

**James Blackerby**

School teacher and part-time farmer  
Ft. Worth, Tex.

They've made the air cleaner, due to emission controls on automobiles and restricting the lead in gasoline. I think that's the best and the biggest accomplishment.

There was some asbestos in the building where I work. They made 'em seal the cracks. I'm sure it was the EPA that made 'em do it. I feel better about that.

**Ken Fassler**

Caretaker  
Glen Echo, Md.

You can't have an organization that is trying to do something good, which is what I assume that EPA is doing, and have the rest of society on a whole different track. In order to really deal with environmental problems, you also need a lot of volunteer help from the whole community. For example, one of our members (of the Sycamore Island Club on the Potomac River) is a volunteer walker—he walks streams looking for clues to pollution. There are a lot of activities like that, that people can indulge in, as a community service, without pay. Until we have that attitude, anything EPA tries to do will be in vain. Because it's not big enough to take care of the damage that millions and millions of people have been causing.

I've lived on the river for more than 10 years. I can see things that go on in the river that are undesirable, but all the pollution can't be attributed to EPA because the real problem is this: if somebody puts something into the system somewhere, it's very hard to trace. Still, if things don't go right, the EPA is at least somebody to blame.

**Bill Vincent**

Pharmacist  
Weatherford, Tex.

EPA has a stigma attached to its name. EPA has probably meddled in other people's business. Some people feel like

the government has no place telling a guy what he can do or can't do in the area of pollution control.

**John Lynch**

Letter carrier  
Cabin John, Md.

When I was a kid, I was always down on the C&O Canal. It was pretty dirty and it smelled a lot. Now the Potomac seems cleaner to me. It seems like there's more fish down there; you see more people fishing.

Delivering mail, I come across a lot of yards that have been sprayed. You can always tell when someone has sprayed their yard because, you know, you can smell the pesticides on it.

**Louis Kraniak**

Engineering technician  
Crowley, Tex.

EPA has accomplished quite a bit. But they've accomplished it by dismantling the businessman. An example I would cite is with this lead control, where they're making these plants shut down after years and years of building up a business. They're hitting the businessman rather than settling something with the public. It has to be a 50-50 proposition, where the businessman concedes a little, and the public concedes a little.

**Richard Banks, Jr.**

Bank employee  
Boston, Mass.

EPA seems grossly underpowered in terms of manpower and enforcement power. Certainly in the field of hazardous waste, EPA has not been able to prevent people from dumping illegally. I don't believe we'd have the toxic dump problem we do if EPA regulations were being followed. Also there has been much use of pesticides in ways which EPA has ruled out. I am thinking especially of an incident involving watermelons in California. The people who ate them became ill.

The regulations EPA makes don't seem to be feared as are the rules of other government agencies like the Securities and Exchange Commission and state bank comptrollers. The Executive Office has not adequately backed EPA in recent years, especially the current Administration. Air pollution, acid rain, and toxic chemicals cannot be adequately controlled by the states without strong federal involvement. We need more federal support to enforce regulations by policing industry and punishing the offenders.

**Michael J. Gilbert**

Legal assistant  
Washington, D.C.

EPA has created an awareness of things that need to be cleaned up. As with all things, the process is slow, and the progress is slow. But people are more aware, and they're trying to do their share.

**Lillian Marsh**

Registered nurse  
Weatherford, Tex.

People are not aware of the amount of damage that's being done to the human body by things that are happening in the environment—things like the aldicarb mess with the watermelons; the Bhopal, India, event; and other chemical spills. It's becoming an almost daily event where people are evacuated from somewhere for a tanker truck that has spilled with a pesticide or a chemical in it. We're really going to have to look at our practices here before we wipe out too large a segment of our population.

**James Kirtland**

Automotive service writer  
Arlington, Tex.

The restrictions they've put on the cars for smog pollution—they organized that at EPA. During the first years, they didn't do too bad. They were still young and small. But now in the later years, they've put such restrictions on the automakers that it's detuned the engines, taken away their horsepower, and it doesn't help the running of the cars as well as it used to. It's restricted everything that you can do to a car.

**Harold Goldstein**

Muffler shop operator  
Gaithersburg, Md.

We used to have a tremendous number of requests to remove catalytic converters. That has tapered down to almost none at all now, although we still do get a very rare request. People are much more aware of the strictness of the law, and are less apt to ask us to break it than they would have been 15 years ago.

I find that people have become educated to the pollution idea now, which they were not 15 years ago. They really couldn't see any more than just bureaucratic interference. But today people have not only come to accept EPA; I think they have also come to respect EPA, because most people feel the way I feel, that the air is noticeably cleaner, and that each individual is contributing to that situation.



Chung



Vincent



Fassler



Gilbert



Blackerby



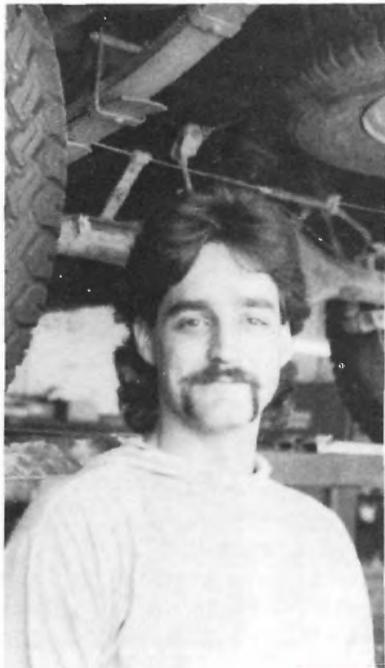
Marsh



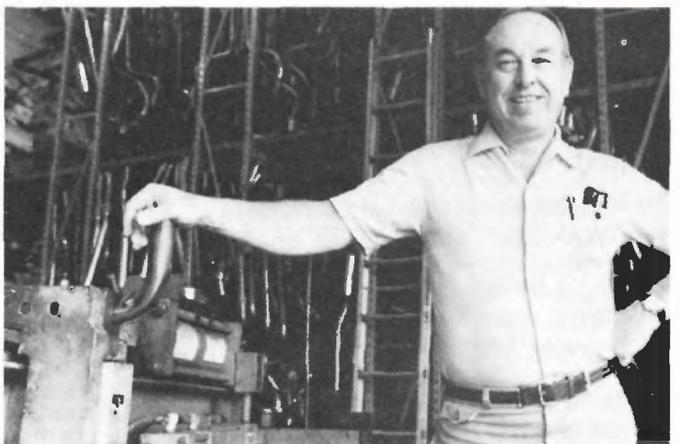
Lynch



Kraniak



Kirtland



Goldstein

**Maureen Erwin**

Interior design specialist  
Marblehead, Mass.

Environmental consciousness is now mainstream and no longer the exclusive concern of the birdwatchers. The agency's greatest accomplishment is cleaning up old industrial rivers where salmon and other game fish are now returning. But EPA has slighted the most crucial air pollution problem, acid rain. The popular support for pollution control is very strong. The average taxpayer would like to see even more money spent on environmental protection.



Whitfill



Fair

**Francis J. Veale, Jr.**

Environmental engineer  
Attleboro, Mass.

EPA recognizes that industry needs time to develop technology, especially to meet water quality-based standards such as will be required of us on the Ten Mile River in Attleboro. EPA is putting the pressure on major corporations like ours to develop the technology. This will then be transferred downward to small companies, and benefit the entire economy. We realize this is our moral responsibility. All of us here at Texas Instruments understand this, all the engineers and other employees. We want to cooperate all the way down the line, because we live here and we want a good environment. We try to make sure that environmental concerns are worked into project design and are closely reviewed and monitored.

**Joe Graham**

Construction superintendent  
Merryfield, Va.

I don't have any use for EPA. They want me to get my truck inspected all the time.

Really, though, they're alright. The inspections are a pain, but they seemed to have done quite a bit to clean the air up.

**Toney Head**

President, consulting firm  
Washington, D.C.

The accomplishments have been significant. There's been a substantial improvement in waste treatment throughout the country, and the cleanup that's taken place in water—in the lakes and streams—has also been significant.

The type of chemicals you put on your lawn has a great deal to do with the type of chemicals that end up in your water. The effect of those

chemicals may not be known for 15 or 20 years. And to what extent those chemicals cause cancer is unknown at the present time. In that respect, what EPA is doing (to regulate chemicals) has a direct impact, and a favorable one, on my life.

**Jim Walters**

Long distance trucker  
Mt. Juliet, Tenn.

If EPA is protecting the environment, I haven't seen any of it. If they're doing it, they need to make themselves more known.

**Barbara Whitfill**

Secretary  
Dallas, Tex.

They got the lead smelter in Oak Cliff closed. I think they could do more to stop dumping of waste and pollution of the waterways.

**Harry Fair**

Telephone repairman  
Boyd's, Md.

I can tell you one thing they did—they must have got rid of the good bee killer we used to have. We run into a lot of bees working outdoors. Whatever they got rid of, it was good stuff. The stuff we've got now, you can spray and it doesn't do much of anything.

**Al Moscardelli**

Manager, hotel barbershop  
Boston, Mass.

People today are aware of the environmental problems of modern life. EPA has done a good job and the people know it.

This country belongs to all the people to share, not to just a few. And the people are willing to be regulated by the government. We have to control our automobiles and the sewage and the toxic waste. I think EPA is very important and very effective.



Head



Graham



Walters

# The Environmental Movement Since 1970

by Robert Cahn and Patricia L. Cahn

The year the Environmental Protection Agency was born, 1970, stands as a landmark in America's quest for a cleaner and healthier environment and improved quality of life. On the first day of that year, the President of the United States signaled the political importance of environmental cleanup when he announced that his first official act of the new decade would be the signing of the recently passed National Environmental Policy Act of 1969 (NEPA). Improving the quality of the environment, added President Richard M. Nixon, would be a major goal for the nation.

Four months later, people by the millions celebrated Earth Day by marching in parades and participating in teach-ins, rallies, and meetings all over the nation to express their determination to have a better environment. They had become increasingly aware of a wide range of problems affecting their lives, such as the air carrying dangerous loads of pollutants and water supplies being threatened by pesticides and other toxic substances.

Earth Day, April 22, 1970, involved more than 2,000 communities and an estimated 20 million participants. It showed that the "conservation movement," which had for many years involved only a small number of organizations with principal interests in

preserving wilderness, fish and wildlife, and national parks, had made a sharp transition. It had grown into a widespread national citizen "environmental movement" that was demanding the solution of new types of environmental problems while also pursuing the traditional goals of conserving natural resources and preserving the nation's natural and cultural heritage.

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*The critics misunderstood the depth of commitment and the growing realization of citizens that the quality of life was a major issue.*

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The mounting awareness put pressure on the Executive Branch to acknowledge that existing government institutions were not able to deal adequately with environmental threats. A Presidential committee on reorganization (the Ash Council) recommended taking the various regulatory functions dealing with air pollution, water quality, solid waste management, pesticides registration and control, and radiation standards and detaching them from three existing departments and three other parts of the federal government and consolidating them in one new agency with a broad mandate to provide environmental protection.

The individual components of environmental protection had been at a distinct disadvantage while operating within departments whose primary mission often militated against them. For instance, when the Federal Water Quality Administration (FWQA) was a part of the Department of the Interior, it usually lost out if it tried to oppose the Bureau of Reclamation.

The formation of EPA brought praise from most environmental leaders and members of Congressional committees

concerned with the environment. They retained some reservations, however, as to whether the new agency would have sufficient power and budget authority to fulfill the role Congress and the environmental movement envisioned for it as the advocate for an improved quality of life.

Environmental leaders expressed these concerns at the hearings on the nomination of William Ruckelshaus as Administrator. The Chairman of the Senate Public Works Subcommittee on Air and Water Pollution, Edmund Muskie, who had introduced a bill to establish an environmental protection agency prior to the Presidential executive order, also reminded Ruckelshaus that the agency must have an independent role. Ruckelshaus assured the Senator that in situations where environmental protection collided with economic development, he would act on the side of protecting the environment.

Environmental leaders hoped EPA would provide a much-needed entity within government for protecting the

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*By the middle of the 1970s, the major environmental organizations had assembled potent grassroots citizen support.*

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environment. The Council on Environmental Quality (CEQ) that had been authorized by NEPA was given no operational powers, but rather was intended by Congress to advise the President and recommend national policies to promote the improvement of the environment. The gathering together of the various regulatory and research entities under the new EPA umbrella showed promise of providing this

*(Robert Cahn received a Pulitzer Prize while he was an environmental reporter for the Christian Science Monitor, and was appointed by President Nixon as one of the original members of the Council on Environmental Quality (1970-1972). He is Special Assistant to the President of the National Audubon Society. Patricia L. Cahn, a freelance writer, was Director, Office of Public Affairs, EPA (1975-1976), and editor of American Education (1966-1970).)*

Of 12 eggs in this picture laid by ducks that had been fed a DDT breakdown product, only one hatched. Three were thin-shelled and cracked; eight others failed to develop. One of William Ruckelshaus' early moves as the first EPA Administrator was to cancel all registrations for pesticides containing DDT.



James P. Blair, c. 1970 National Geographic Society

In 1970, members of GASP—Gals Against Smog and Pollution—march in a picket line to protest pollution from a paper mill near Missoula, Mt.

needed operational muscle within government.

Both EPA and the environmental movement are now 15 years older—and perhaps wiser. With the benefit of hindsight and the perspective of those 15 years, let's take a look at the environmental movement itself and also assess how EPA has measured up to the movement's hopes and expectations.

Soon after Earth Day, when the Kent State riot and Vietnam War dominated the news, environmental issues disappeared from the front pages and television screens, and some pundits declared that the Earth Day hoopla had been only a passing fad and the environmental movement would fade

### *The movement may have lacked funds but was well equipped with foot soldiers.*

away as citizens shifted their concern to the war and economic issues. But the critics misunderstood the depth of commitment and the growing realization of citizens that the quality of life for their children and future generations was a major issue.

In 1969, for instance, when the Nixon Administration budgeted only \$214 million of the \$1 billion authorized by Congress for sewage treatment plants, the people reacted. Environmental groups, cities and counties, labor, health organizations, and the League of Women Voters organized the Citizens' Crusade for Clean Water to fight for adequate funding for sewage treatment plants. Intensive lobbying by citizens across the nation led Congress to increase the appropriation to \$800 million, and the President was forced to accept it.

Early in the 1970s, the environmental movement was sparsely funded and possessed few lawyers, scientists, and lobbyists. But it gradually increased its financial base and built up its ability to further its goals. The Nixon White House, meantime, lost interest in the environment as a political issue. Although the President signed environmental messages to Congress in 1971 and 1972 that included encouraging statements and strong legislative proposals that had been prepared by the CEQ, he cast his lot with industry, paid little heed to other recommendations of the CEQ, and did not seek its advice, nor did he work for enactment of most of the legislative proposals included in the environmental messages.

The environmental movement intensified its activities to meet the challenge. Washington staffs of national organizations worked closely with environmental leaders in Congress and their staffs, helping in the development of new legislation or adding amendments to strengthen existing laws. They did their own research and sleuthing to uncover instances where governmental agencies or industry were breaking pollution control laws or were planning major projects that threatened

to destroy or harm natural resources. While industry spent millions lobbying EPA to draft lenient standards and regulations or to avoid enforcement actions, the environmentalists prowled the halls of EPA to find out what was going on. They managed to get involved early enough to submit evidence on behalf of the public in order to bolster environmental protection within EPA.

To add to their individual clout, environmental and citizen groups banded together to form such organizations as the Clean Air Coalition, the Energy Conservation Coalition, the Alaska Coalition, and other alliances to work on environmental issues. By the middle of the 1970s, the major environmental organizations had assembled potent grassroots citizen support throughout the nation. The Sierra Club, the National Audubon Society, and The Wilderness Society, for instance, brought activist members to Washington for seminars on key issues and for training in lobbying and networking. The organizations compiled computerized lists of members and other activists in each Congressional district so that on a given piece of legislation thousands of letters, telegrams, and phone calls could be directed at certain members of Congress who might hold key votes.

Industry, of course, had long possessed this capability. In addition to highly paid professional lobbyists with large expense accounts, industry had access to its own stockholders and could also afford to buy direct mail lists to get its message to thousands of people on a particular vote to counter the environmental lobby. But the hometown environmental lobbyists visiting their Congressmen or writing and phoning from home often proved more influential than industry's campaign contributions or lobbying by



senior corporate executives. The movement may have lacked funds, but was well-equipped with foot soldiers. It also found the media receptive to its issues and received good news coverage.

If no other alternatives were available, the environmental movement resorted to the expensive, time-consuming use of lawsuits to force compliance with environmental laws and regulations.

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***While industry spent millions lobbying EPA, the environmentalists prowled the halls of EPA to find out what was going on.***

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When the CEQ was unable to get a satisfactory environmental impact statement (EIS) from a government agency on a major action affecting the environment, lawsuits were filed.

As a result, many proposed governmental actions were modified to avoid environmental problems, and in a few cases projects were abandoned entirely after courts upheld the EIS

procedure prescribed in the National Environmental Policy Act. Frequently when one organization filed a case, other environmental organizations would join in *amicus* proceedings, or help with research or funding. Other legal actions were facilitated through amendments to existing laws or by new environmental legislation which allowed lawsuits to be filed on behalf of citizens.

During the formative period of EPA, environmental leaders found encouragement in some of the early positions and decisions of Administrator Ruckelshaus, and recognized the challenges he faced in trying to assemble a well-motivated, capable organization from personnel, most of whom had been transferred from a half-dozen federal agencies. In the area of water quality, EPA established standards for compliance under strict enforcement of the long-neglected Refuse Act of 1899, and filed more than 150 criminal actions during 1971. EPA reconvened five regional enforcement conferences and initiated two new ones to obtain better compliance with water pollution abatement regulations. The agency forced cleanup of the Houston ship channel and cited three major U.S.

cities—Atlanta, Cleveland, and Detroit—for water quality violations.

Ruckelshaus issued notices of cancellation of all registrations for pesticides containing DDT, though he did not take the step urged by environmentalists—suspension of use—until later when he was persuaded to do so by public demand plus court actions initiated by environmentalists, as well as the evidence produced at EPA's own hearings. The EPA Office of General Counsel assumed an advocacy role, presenting the strongest cases possible, with the Administrator as ultimate judge, and sought to initiate enforcement proceedings, although this advocacy attitude was not given much support by the agency's program executives. The environmentalists gave Ruckelshaus high marks in his first major rulemaking activity under the 1970 Clean Air Act Amendments, when he promulgated strong national primary and secondary ambient air quality standards.

Then, in the spring of 1971, environmentalists were distressed to see Ruckelshaus, under pressure from industry, the Office of Management and Budget (OMB), and certain White House

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officials, make serious compromises and reverse the agency's earlier proposed standard for state implementation of air quality. The Sierra Club and other organizations promptly went to court, claiming that the proposed regulations did not satisfy requirements of the 1970 law. About this time OMB was designated by the President to oversee all EPA activities through a so-called "Quality of Life" review. From then on, OMB frequently tried to weaken EPA

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*EPA has cast itself in the role of balancer between environmental and industry positions.*

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proposals that were opposed by industry and began to impose economic tests on regulatory actions.

By mid-1972, environmental leaders felt that EPA had lost much of its early advocacy and even much of its initiative in working toward improving environmental conditions. In addition to the problems of political interference from the White House and OMB, EPA was receiving little support from other federal agencies. EPA was further hampered by the energy crisis of 1973 and 1974 and subsequent pressures for weakening environmental regulations that were perceived as preventing development of new energy supplies. Had it not been for the unusual political strength of Russell Train, the only EPA Administrator to come out of the environmental movement, EPA during 1973-1976 probably would have caved in completely to White House pressure to favor industry. In 1974, Train was able to resist White House demands that EPA support sweeping amendments to



John L. Tveten

weaken the Clean Air Act. During that period, Train's threat of resignation forced White House and OMB officials to allow EPA more independence in its actions.

EPA and the environmentalists both entered an unusual period during the early years of the Carter Administration. For the first time, a President actively supported environmental issues. Carter gave EPA a large increase in the fiscal 1978 budget. A number of experts from environmental organizations accepted high-level positions at EPA. But in the last two years of the Carter presidency, EPA again felt the budget squeeze when it was denied sufficient funds to accomplish the additional workload imposed by new legislation. And support from the White House faded somewhat, again in the face of an energy crisis. Elements of the Carter White House even promoted an Energy Mobilization Board which would have been empowered to waive environmental laws.

In the five years since 1980, both EPA and the environmental movement have faced unprecedented adversity. Environmentalists claim that under cloak of regulatory reform, the

Administration not only has attempted to weaken EPA through budget and personnel reductions, but has sought to emasculate or revoke environmental protection regulations, policies, and laws. Environmental leaders say that the effects of Administration policies on the agency, especially in the 1981-83 years, have been a serious drop in staff morale, diminished ability to accomplish objectives because of the firing or resignation of many of its best executives, planners, and scientists, loss of stature within government, and damaged credibility with the public.

Responding to actions by Interior Secretary James Watt and EPA Administrator Anne Gorsuch Burford, thousands of citizens joined environmental organizations or donated funds to the environmental cause. And the movement has reached into new issues—occupational health, indoor air pollution, world population stability, tropical forest loss, biological diversity, and other global problems. New areas of activity include helping to prevent harm

Recreational fishermen try their luck in the Houston ship channel. Cleanup of the channel was an early EPA priority.

from the peacetime dangers involved in nuclear weapons production, testing, transportation, and deployment, and the long-term biological effects of nuclear war ("nuclear winter").

Also, environmental groups, while maintaining their own individual objectives, are working together and coordinating efforts more effectively than ever before. For instance, the heads of 10 major environmental organizations, who now meet regularly to discuss priorities, recently outlined a course of action for the rest of the century, which has been published as a book, *An Environmental Agenda for the Future*.

In the early 1980s, the environmental movement rallied behind the "Save EPA" campaign initiated by several former EPA officials and led by former Assistant Administrator for Plans and Programs William Drayton. In addition to lobbying, they released to the public a secret OMB plan to cut EPA personnel by almost two-thirds. They prepared for Congressional committee consideration reasonable alternative budgets for fiscal 1981 through 1983 which played a major part in averting the OMB plan and holding the cuts to the lower but still severe level proposed by Administrator Gorsuch.

Environmental organizations have also brought hundreds of citizen lawsuits to help restore some degree of compliance which they believe has been severely neglected since the start of 1981. They claim that voluntary compliance—the most critical element in the regulatory system—has broken down because industry has been getting signals that neither EPA nor the Department of Justice would enforce the laws or regulations, and states are unable or unwilling to do it. Perceiving this, the Sierra Club, the Natural Resources Defense Council, and

individual environmental attorneys started a campaign in 1983 for citizen prosecutions as authorized under provisions of environmental protection statutes. Under the Clean Water Act, for instance, environmental attorneys obtain a company's own records of noncompliance with water quality regulations—as required to be filed with EPA—and the attorneys use them to bring suits. They have won more than a hundred court-approved settlements and have collected penalties for local public uses without the cases ever coming to trial.

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### *The environmental movement sees itself as operating in the best interests of the public.*

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Environmental leaders see EPA's credibility on enforcement as somewhat improved since the return of Bill Ruckelshaus and under the current administration of Lee Thomas. But they believe it is by no means restored because industry knows that EPA does not have the resources to carry out the laws, and that the signals from the White House and OMB remain the same—environmental regulatory actions against industry should be eased or abandoned.

EPA, meantime, finds itself in the middle, and has cast itself in the role of balancer between environmental and industry positions.

"In trying to balance all the interests, the net result has been heavily compromised decisions," says William Butler, government affairs vice president and counsel of the National Audubon Society. "The Department of Agriculture doesn't do that; it does what it believes is best for the farmers. The Bureau of Reclamation does what is best for the water developers. If EPA was playing the game on behalf of its real

constituency, it would be acting for the public at large which is concerned about environmental quality. Instead, EPA sees its role as requiring the balancing of various interests among its perceived constituency, with a wary eye cocked on a hostile OMB, and with no Administration allies whatever."

Thomas Jorling, Professor of Environmental Studies at Williams College, Massachusetts, who was Minority Counsel of the Senate Public Works Committee in the early 1970s and EPA Assistant Administrator for Water and Hazardous Materials from 1977-1980, says that "EPA is now a professional agency that has no environmental soul, and as a consequence, its performance will be consistent with the political ideology of its Administration. That means that in this Administration it is a balancer that gives stronger weight to economic values than to environmental values."

The environmental movement sees itself as operating in the best interests of the public, and believes that the public wants a deeper commitment to environmental values from government, and especially from EPA.

"In the environmental area, the dynamic of change in recent years has always been in one direction: the American people get tougher and tougher and more adamant and more shocked about the state of environmental cleanup," stated pollster Louis Harris recently. "And they are literally furious that there has been so much perceived foot-dragging on the part of those with the power to get things done. Thus the majorities in any sound poll conducted on this subject are simply huge and staggering." □

*A secondary clarifier, part of the wastewater treatment system at Consolidated Papers, Inc., of Wisconsin Rapids, Wis.*

# Industry's Experience with EPA

by Richard L. Leshner

The establishment of the Environmental Protection Agency by President Nixon was greeted with mixed feelings by the business community. Some welcomed a single federal agency to deal with the new national awareness of the environment, while others were innately suspicious of a further concentration of power in Washington. During the ensuing years, both points of view have been supportable as EPA has gone through the growing pains of infancy and early development.

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*An unfortunate aspect of EPA's history is that nobody has ever been totally happy with its work.*

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Suspicion and frustration with EPA grew in the early years primarily because of the expenditures required by the private sector, but this was soon accepted as a necessary cost of doing business and of being a good corporate citizen. That suspicion and frustration was revived, however, during a period of over-regulation.

This over-regulation resulted in part because suspicion was not limited to industry. An unfortunate aspect of EPA's history is that nobody has ever been totally happy with its work. Many in industry weren't happy during the Carter Administration and environmentalists certainly weren't happy when President Reagan came into office.

The swings in the regulatory pendulum, actual or perceived, have masked the fact that there has been a great deal of progress in the past few years—and room for more can now be identified. Certainly the private sector—not to mention environmental

groups and regulators—are catching on to the fact that the process of confrontation and litigation is not productive. Nevertheless, there will still be times of confrontation, and litigation will still be required to overcome irreconcilable points of view.

Former Administrator Ruckelshaus and current Administrator Thomas have done much to bring the pendulum to the center. Perhaps a definition of center is that nobody is happy, but also not unhappy.

I despair that much friction stems from continuing popular misconceptions of industry's attitudes and practices toward environmental control and protection. How many of us still see cartoons showing smokestacks billowing dark clouds and pipes discharging ugly ooze? In reality, we are coming upon a generation that has grown up without ever actually seeing such eyesores.

Another popular misconception is that the environment is still dirty, in spite of all sorts of published statistics to the contrary. (For example, see the periodic reports of the Council on Environmental Quality.) Related is the belief that industry is not doing its share. Last May, McGraw-Hill

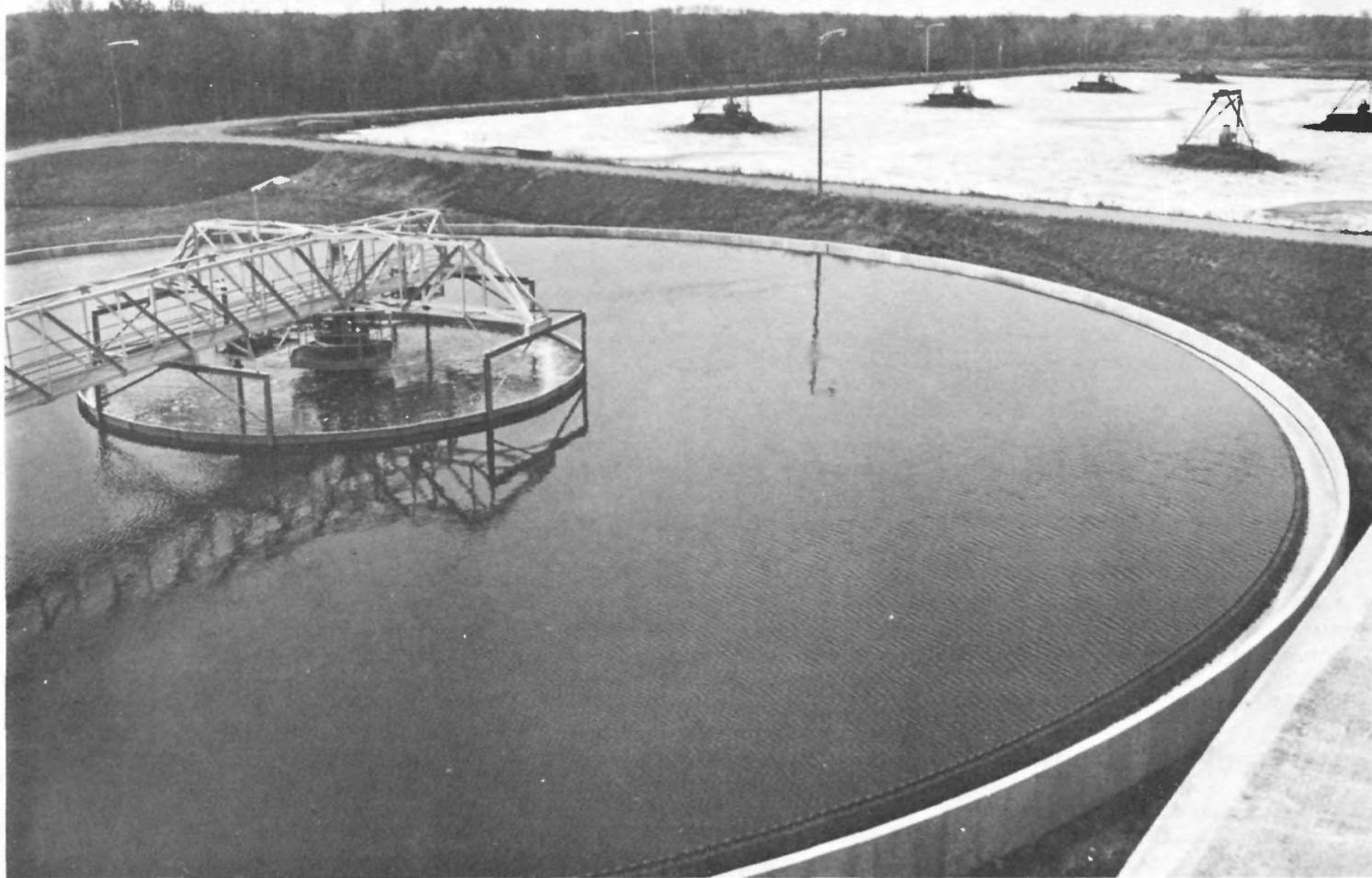
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*The private sector bears almost 79 percent of the total cost of pollution abatement in the country.*

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Economics projected that spending for pollution control in 1985 would be \$10.5 billion, one of the largest sums on record. The Department of Commerce, using a somewhat different basis for calculation, estimated that in 1982, spending was \$45.9 billion by the private sector. Of this amount, capital investment by industry was \$3.0 billion just for air and water pollution control

*(Leshner is President of the U.S. Chamber of Commerce.)*



and solid waste management. The private sector bears almost 79 percent of the total cost of pollution abatement in this country.

Whichever method of computation is preferred, the numbers are still large and proportionately more than anywhere else in the world. It lends support to the adage that only affluent countries can afford environmental protection, another reason we must work to sustain a growing economy.

I appreciate why some feel the environment is still unclean and unhealthy or that progress is too slow. The only problem with holding that view is that the facts keep getting in the way. All of us must appreciate that as science improves, especially analytical chemistry and molecular biology, it becomes easier to detect new effects, particularly on a micro-scale. Such findings should not, by themselves, be used as a basis for stiffer laws and regulations. At the same time, such

findings should stimulate all of us to become more inquiring and seek an intellectual understanding of the problems as a prelude to prudent environmental management.

Two brief examples will illustrate the challenges before us. First, consider the reports of trace amounts of potentially harmful materials in the environment. We often read of concentrations of less than one part per billion (1 ppb). It is astounding that these concentrations can even be detected because finding 1 ppb is equivalent to picking out one second in almost 32 years. The mathematical probability of these few molecules being inhaled, ingested or absorbed may be low, and it is only through these routes that material can be potentially of harm.

Second, consider a hypothetical circumstance that an industrial manager may have to struggle with. Suppose that a plant leaks 100 kg of a chlorinated solvent. Heavier than air, it settles as a dense vapor and moves along the ground. It reaches the plant fence line, the entrance to a community, at a concentration of perhaps 20 parts per million. The compound is a suspected

animal carcinogen; that is, it does not consistently, with the required statistical significance, cause an increase in the incidence of carcinoma in tests on two species and two sexes of mammals. However, it does cause an increase.

What certainty can there be that this vapor, entering the community at this concentration, will disperse or not—or, if it does disperse, that it will or won't expose one or more persons to a concentration for a sufficient period of time to cause any illness or pathology, that those exposed would not have developed anyway?

It sounds complex and it is. But this is just the sort of question or standard of ethical behavior our society seeks. In the absence of certainty, we want prudence. But the extrapolation of prudence is certainty. Neither EPA nor its regulated industries can promise or achieve certainty in environmental protection. Hence, the suspicion and polarization between EPA, industry, and

Employees of Duke Power Co. in North Carolina making a survey of fish in company lakes.

environmentalists is exacerbated. And that's unfortunate. It's unfortunate because much of the friction could be avoided if EPA and the public would step back and take a more realistic look at the situation.

I believe that newly discovered environmental problems can be categorized in three broad groups. The first, or lowest priority, are those findings that are of interest from a research or future tracking viewpoint. The opposite extreme, or third category, are those that require an immediate response because of an obvious inherent and substantial threat to public health. An example would be the evacuation of Times Beach, Mo., in 1983 due to dioxin contamination—a prudent action even though uncertainties still surround the human health effects of dioxins.

The middle category is more difficult to define but should include those findings that have a potential for harm

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***Another popular misconception is that the environment is still dirty, in spite of all sorts of published statistics to the contrary.***

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and must be the objects of continuing research and scrutiny. An example is the possible depletion of the ozone layer as a result of chemical reaction with fluorocarbons. An early hypothesis and theoretical calculation showed that the potential for harm might be great and a massive research effort ensued. This was good. The research has now shown

that more information is needed but the original hypothesis and calculations have been corrected to show that the threat is far from imminent.

I hope that in the future EPA will somehow categorize its efforts this way and help teach the public that every finding is not cause for leaping into a new regulatory program.

It is the responsibility of business and industry to provide the economic growth and employment that improves the quality of life. Growth can be achieved with environmental systems management to protect the environment from damage and to mitigate the effects on nature that began when *homo sapiens* first stood erect.

The systems approach must include two essential elements. Each must be understood in public policy decisionmaking.

The first element is management of effects and risks. The former can be controlled end-of-pipe or by making appropriate process design and practices changes. Regulations should not lock in technology so as to prohibit or retard these kinds of technological changes.

Risk management must include the setting of environmental health goals and standards which reflect this approach to managing effects on people, animals, and biota. Periodic review of primary standards, as now required by some laws, is essential. The standards should be moved up or down according to the best scientific understanding, not according to a political agenda or confrontation.

The second key element is the differentiation between goals and strategies. Once the environmental and health goals are set, management strategies are established through legislation or regulations. There is a mistaken belief that the stricter the strategies, the cleaner the environment. Actually, the stricter the strategies, the

more difficult and longer the process to achieve the goals. Overly strict strategies are the antithesis of environmental quality.

The membership of the U.S. Chamber of Commerce includes the regulated and the non-regulated business communities. It includes those industries that control the majority of effluents and spend the majority of money. Perhaps their only competition in this regard are the federal, state, and local expenditures for sewage treatment plants.

Briefly stated, the business community's viewpoint is multiple use

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***The American business community accepts its responsibility to achieve growth with proper environmental management.***

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of resources and their protection through environmental systems management, using strategies and methods that are simple enough to protect human health and the environment. The converse is avoiding complex, prescriptive over-regulation for its own sake. Sometimes such regulations, especially when written into law instead of being left up to EPA, become the hallmark of a misdirected and delayed national program.

Special incentives are not needed. Rather, our members argue for removal of disincentives, such as the



unnecessarily complex strategies, delays in permitting or in issuing regulations, uneven enforcement, or technically unrealistic standards. All of these lead to uncertainty and inefficiency.

The American business community accepts its responsibility to achieve economic growth with proper environmental management and it accepts its corporate responsibility to be a leader in this field. All of us despair the few scofflaws who spoil everyone's nest.

Environmental quality is now part of the American ethic. It is independent of party, state of residence, profession, or other demographic factors. The ethic does not have to be justified or excused; it is practiced and taught to our children.

All citizens, individuals and corporations, have the incentive and

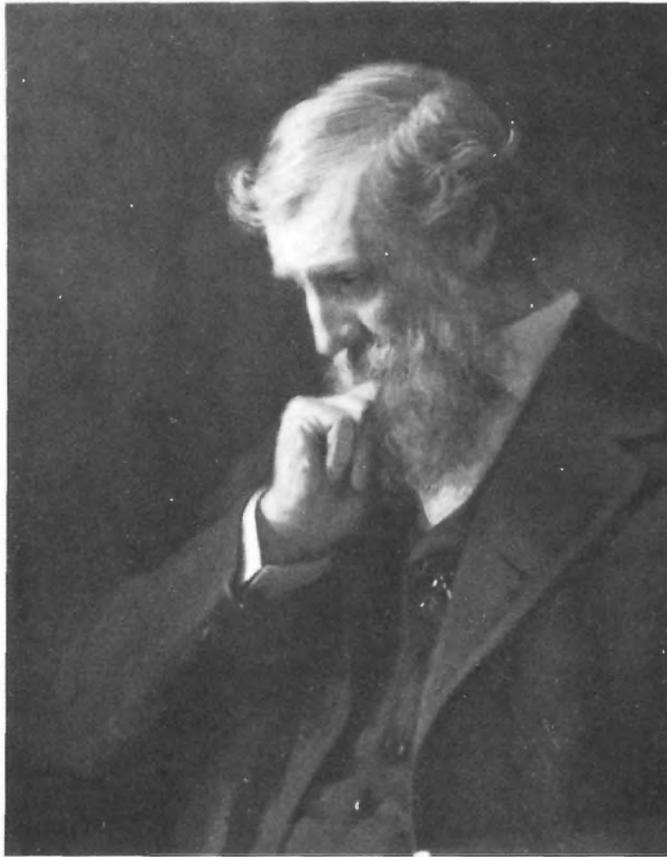
ethic to achieve environmental quality. Disincentives placed in their way by governments are unfortunate and fairness alone dictates that they be removed.

I look forward to the continued maturing of EPA as truly the Environmental Protection Agency and away from being the environmental regulatory agency. I wish the agency well in what I now perceive as a metamorphosis in this direction—and I offer the U.S. Chamber's full cooperation to achieve our mutual goals for the nation. □

# John Muir: Environmental Pioneer

by Jack Lewis

National Portrait Gallery, Smithsonian Institution, gift of Mrs. E. H. Harriman to the U.S. National Museum



*Portrait of John Muir, by Orlando Rowland.*

Most Americans would probably stumble for an answer if asked: Who launched the "conservation" or "environmental protection" movement in the United States? Those with short memories might say Rachel Carson; those with a deeper knowledge of American history might say Theodore Roosevelt or Gifford Pinchot.

But these great names are dwarfed by an even greater: John Muir, the man who saved Yosemite, the California Redwoods, the Grand Canyon, and the Painted Desert, just to mention the most famous natural wonders he battled to preserve. To save them, Muir had to learn the ways of lobbying and political infighting, but it was as a writer and even more as a legendary outdoorsman that he was able to mold public opinion in his day.

Muir left such a huge mark on the real world that it is easy to get the feeling that he compares not to historical figures but to such giants of American folklore as Paul Bunyan and Johnny Appleseed. Muir's wanderings over the face of the United States have about them a super-human quality, larger than life, like the landscape he favored.

The terrain Muir loved best came to be almost synonymous with his name: the High Sierras of northern California. From 1868 to 1880, Muir made his home in a humble shack nestled amid the mountains of Yosemite. From that shack, he ventured forth regularly for prolonged nature hikes. During these treks, Muir gathered a wealth of information about the ancient glaciers that once molded that landscape as well as its present-day flora and fauna.

Muir recorded his impressions in a rich series of articles and books that were enormously popular from the 1870s to the 1920s. Through these writings, he has continued to be a major

influence on conservationists and environmentalists, though his name is no longer familiar to the general public. Muir's books would be more popular today if readers had a better idea of the extraordinary eloquence and conviction that is the hallmark of his writing.

Muir paints a picture of a California so pristine that "it was one sweet bee garden throughout its entire length, north and south, and all the way across

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*Muir's wanderings over the face of the United States have about them a super-human quality.*

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from the snowy Sierra to the ocean." He was thrilled by the natural wonders he saw, and he conveyed that excitement in writing that made the beauty "stand out through the words like a fire on a hill." Muir's goal was to break through the apathy of his readers, to get them out of their armchairs and into the habitat he loved. "No amount of word-making," he argued, "will ever make a soul to know these mountains. . . . One day's exposure to mountains is better than cartloads of books."

True to this perspective, Muir postponed his own "word-making" until he had years of exploring under his belt. He was 35 before he published his first article and 50 before his first book appeared. The hoopla that greeted those publications surprised Muir: "Though I never intended to write or lecture or seek fame in any way," he remarked in the 1890s, "I now write a great deal and am well known—strange is it not that a tramp and vagabond without worldly ambition should meet such a fate."

In any country other than the United States, such a fate would have been strange indeed. But by the time John Muir first set pen to paper, American

literature had already produced at least two vagabond authors: Henry David Thoreau and Walt Whitman. Both Thoreau and Whitman look pretty tame compared to Muir, who favored "pure wildness" in all things. "Even open-eyed Thoreau would," in Muir's opinion, "have done well had he extended his walks westward to see what God had to show in the lofty sunset mountains."

Muir came by his passion for mountains naturally. Both his father and his mother were descended from Scottish Highlanders. John himself was born in the Lowland port of Dunbar in April 1838. Muir took his Scottish roots seriously. He did not even become an American citizen until 1903—at the age of 65! One of Muir's closest American friends, John Burroughs, described him as a "rank, cantankerous, and withal lovable Scot." Yet Muir spent only 11 years in Scotland before abandoning it forever to seek a better life in the New World.

It was Muir's father Daniel who took John and his brothers to Wisconsin to prepare a home for the women of the family. Daniel can best be described as a religious fanatic. When he began farming in Wisconsin, he expected complete obedience from his sons in matters religious as well as agricultural.

John Muir rebelled against the gloom of a life based on ceaseless labor as the antidote to sin. From an early age, the younger Muir showed ingenuity in his patterns of rebellion. His father wanted no book studied in his home but the Good Book, so John got up at one o'clock every morning and read scientific books until dawn. He also invented labor- and time-saving devices such as a self-adjusting sawmill, a lamp lighter, and a bizarre "early-rising machine." The latter consisted of a bed mounted like a seesaw on a fulcrum. Ropes and pulleys held the bed in a

horizontal position until the alarm went off. Then it lurched Muir up and onto his feet in seconds.

Muir was 22 when he left the farm to attend the state fair in Madison. He set up a display of his odd inventions and quickly attracted attention, most of it favorable. Encouraged, John decided to stay on at the University of Wisconsin as a student. It was not long before he had crafted a study desk capable of shooting one book up for inspection, holding it in place for a time, and then substituting another. Muir studied the sciences in hopes of becoming a doctor. The Civil War, however, led to a drastic change in his plans. Muir, an ardent pacifist, felt certain he would be drafted to fight in the Union Army. In the fall of 1863, he fled to Canada.

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*His greatest influence was always upon those who were brought into personal contact with him.*

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Thus began the years of wandering that were to become the basis of the Muir legend. From the very beginning, Muir was no ordinary vagabond. Everywhere he walked, he sought samples for his growing herbarium—or collection of plants. But Muir had to travel light and travel alone, and sometimes despair crept up on him.

On one particularly depressing day in 1864, as he was slogging through a Canadian swamp, Muir came on a sight that restored his faith in God, nature, and himself. Nestled apart from other vegetation, he found two rare white orchids shimmering against a background of yellow moss: "I never

before saw a plant so full of life; so perfectly spiritual; it seemed pure enough for the throne of its Creator. I felt as if I were in the presence of superior beings who loved me and beckoned me to come. I sat down beside them and wept for joy."

Fortified by this experience, Muir settled briefly in a factory town on Georgian Bay. After a fire destroyed his herbarium, he returned to the United States and took a job at a machine shop in Indianapolis. Shortly after he began working there, Muir suffered a serious accident that broke him loose from conventional moorings once and for all.

It happened late one night in March 1867. Muir let a file slip from his hand, and it flew up and pierced the cornea of his right eye. Muir lost all sight in both eyes. For three months, he lived with the fear that his sight was "closed forever on all God's beauty." When he suddenly regained his sight, he felt like a man totally reborn. "I bade adieu to all my mechanical inventions, determined to devote the rest of my life to the study of the inventions of God."

Liberated from worldly care, Muir embarked on "a grand sabbath day three years long." He set himself no other goal than building up "a stock of wild beauty." Muir gathered samples for a new herbarium as he walked from Indiana to Texas. He had reached the Gulf Coast of Texas when a terrible fever halted his travels in the fall of 1867. Muir came close to dying. Oddly, however, his recovery propelled Muir toward a break with Christianity.

Henceforward, Muir professed a passionate pantheism: not in public but in the privacy and safety of his journals. Everywhere in nature he saw the hand of God, but he rejected the Judeo-Christian notion that nature exists



National Park Service photo by George Grant

to serve man and man alone. To Muir, animals and vegetation had an equal claim to glory. Especially after his migration to California in 1868, Muir seemed to cultivate a mystical faith in nature. "There is no mystery," he wrote, "but the mystery of harmony, no inexplicable caprice, no anomalous or equivocal expression on all the grandly inscribed mountains."

Muir set as his goal in Yosemite a life lived in harmony with the greater harmony of nature. His contempt for the vast majority of humans, incapable of achieving such harmony, came through in Muir's chilling commentary on an 1875 flood in the Sierra foothills: "True, some goods were destroyed, and a few rats and people were drowned, and some took cold on the house-tops and died, but the total loss was less than the gain."

Years of living apart from mere mortals trapped in "lowland confusion, degeneration, and dust," gave Muir psychic powers that fueled his personal legend. The California mountain man claimed to have developed an "other self" that guided him at crucial times, a sort of telepathic alter ego.

In 1868, while sketching near the North Dome of Yosemite, Muir suddenly was seized by an overpowering conviction that one of his Wisconsin professors had just entered the valley near the base of the great El Capitan rock. After racing for hours, Muir found James Davie Butler at Vernal Fall. The same unfailing telepathy sent Muir hurrying to the deathbeds of his mother and father without any advance warning that they were even ill.

On an everyday basis, Muir's "other self" intervened to keep him surefooted in wilderness dilemmas that would have killed a lesser man. The most celebrated of these narrow escapes

occurred in 1880. On an expedition to Alaska, Muir wandered away from his companions and found himself stranded on a shelf of ice surrounded by crevasses too wide for jumping. Strengthened by his "other self," Muir managed to crawl along a 70-foot-long sliver of ice joining the shelf to the glacier. "At such times," he noted, "one's whole body is eye, and common skill and fortitude are replaced by power beyond our call or knowledge."

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*Muir was able to pique the environmental conscience of all the Presidents from Benjamin Harrison to Woodrow Wilson.*

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Just because such a power was "beyond our call or knowledge" was no reason, Muir believed, to give way to base superstition. He was sure that phenomena "now called supernatural . . . are as natural as any other forces with which we are acquainted . . . There is yet at the bottom of all such humbugs a basis of truth, founded on natural laws, which perhaps some day we may discover."

Strong-willed and eccentric, Muir appeared to be a poor candidate for domestication. But he found a woman tolerant of his quirks and married her in 1880. John and his oddly named wife, Louie, had an extremely happy marriage. Louie gave Muir a home and two beautiful daughters, but also free rein to roam when the spirit moved him. Louie also encouraged John to record his adventures in books and articles. John hated to write, but he was thrilled when his early efforts met with resounding success. Muir's writing gave him something far more important than wealth: unmatched prestige and influence in the American conservation movement.

Muir parlayed his newfound influence into a noteworthy environmental achievement: he masterminded the intense lobbying that led to the founding of Yosemite National Park in 1890. The lobbyists encountered virulent resistance from those intent on leveling the forests and plowing the meadows of Yosemite. It was not until Muir published two articles in the Century magazine that the tide of public opinion turned and Yosemite became a national park. The same Muir-induced burst of public enthusiasm led to the founding of Sequoia National Park and General Grant National Park, also in 1890.

In May 1892, Muir brought together the first members of the Sierra Club. As the first president of that influential body, Muir was able to pique the environmental conscience of all the Presidents from Benjamin Harrison to Woodrow Wilson.

Muir's most powerful ally during the Harrison Administration was John W. Noble, the Secretary of the Interior. Noble sneaked past Congress the so-called "Enabling Act" of 1891. This permitted President Harrison in February 1893 to set aside as "forest reserves" 13,000,000 acres of wilderness land not yet cleared for designation as national parks. Four years later, Grover Cleveland used the Enabling Act to bring 21,000,000 acres of wilderness land into the forest reserve system.

Muir's influence was particularly strong during the Administration of Theodore Roosevelt. In 1903 Roosevelt personally asked John Muir to be his guide on a tour of the High Sierra. The two men went off alone for three days of roughing it among the giant sequoias of the Mariposa Grove. Muir had "a perfectly glorious time" with T.R., whom he considered the most "interesting, hearty, and manly companion" he ever had.



The Hetch Hetchy Dam and Reservoir are located in Yosemite National Park but are owned and used by the City of San Francisco. Muir fought to stop construction of the dam, which he believed would threaten Yosemite wildlife.

Muir and his "beautiful cathedral" of Mariposa redwoods made an equally strong impression on Roosevelt. The day after the two men parted, President Roosevelt instructed his Secretary of the Interior to extend the Sierra reserve northward all the way to Mount Shasta. During his Administration, America's greatest conservationist President doubled the number of national parks and almost quadrupled the national forest area, from 46,000,000 to 195,000,000 acres. At Muir's personal suggestion, Roosevelt saved the Grand Canyon and the Petrified Forest by declaring them national monuments—the first step toward national park status.

One highly personal tribute gave Muir particular gratification. In 1907, William Kent, a wealthy Californian, gave a huge tract of Marin County real estate to the federal government. Rising on the most prominent feature of that land—Mount Tamalpais—was a priceless stand of giant redwoods. Kent requested that the forest be named "Muir Woods," in honor of America's greatest naturalist. Muir thanked Kent heartily for performing "in many ways the most

notable service to God and man I've heard of since my forest wanderings began."

Muir's forest wanderings were coming to a close. The death of his wife in 1905 had dealt him a stunning blow, and he no longer found it as easy as he once had to range through the wilds of the Sierra. Only the never-ending struggle to protect the American wilderness kept Muir vigorous. He knew from bitter experience that getting a region designated a national monument or park was often only the beginning of the battle. "Ever since the Yosemite National Park was established in 1890," Muir complained, "my own real work has been sadly interrupted in trying to assist in its preservation. While a single peak or dome, tree, or cascade is left, the poor stub of a park will still call for protection."

These words, written in 1907, accurately predicted the crisis that clouded Muir's last years: the threat to Yosemite posed by the proposed Hetch Hetchy Dam. The justification for the dam was San Francisco's growing need for drinking water. Muir ascribed equal—if not greater—value to the needs of his trees, flowers, and wildlife, which he knew the dam would harm severely. In his book *Yosemite*, published in

1911, Muir cursed "these temple destroyers, devotees of ravaging commercialism, [who] seem to have a perfect contempt for Nature."

But all Muir's eloquence and all his influence was not able to stop the Hetch Hetchy Dam. Woodrow Wilson, who owed many favors to San Francisco politicians, approved the project shortly after he took office in 1913. Muir never really recovered from the shock. He continued his writing—this time a book about Alaska—but without his customary enthusiasm. Muir died of pneumonia in December 1914, at the age of 76.

The loss of Muir the man was all the greater because of his extraordinary personal charisma, fully understood only by those who actually knew him. His friend John Burroughs said of Muir: "He has only half expressed himself in his books—he is only half there. . . . No one could thoroughly know John Muir. . . until he met him." Theodore Roosevelt agreed that "John Muir talked even better than he wrote. His greatest influence was always upon those who were brought into personal contact with him."

We have to content ourselves with Muir's books—books so vivid it is hard to imagine an author twice as vivid. *The Mountains of California*, *Our National Parks*, *My First Summer in the Sierra*, *Stories of my Boyhood and Youth*. . . The list goes on and on, and so does the influence of John Muir, the one man who has done more than any other to save the beauty of America for future generations. □

# Memorable Moments at EPA

by Roy Popkin

*On December 2, 1970, 5,650 people scattered throughout six federal entities coalesced into the initial EPA staff. Many people have come and gone during the past 15 years as the agency has grown to more than 14,000 employees. But some 1,900 of the original group remain. We talked to a sampling of these "old timers" to find out what events seemed most memorable in their careers with EPA.*

*Their responses included everything from scientific breakthroughs to enforcement crackdowns, from sharing knowledge with other countries to the people-to-people relationships which bound EPA's employees together in a common concern for the well-being of the world around them.*

*For some, the past is only prologue as they see worked-for programs or scientific developments offering the opportunity for even more memorable future experiences.*

*It is unfortunate that the Journal cannot report on all 1,900, but we believe these memories and sentiments are a fair and interesting representation of all who have been in the agency since Day One.*

*(Popkin is a writer in the EPA Office of Public Affairs.)*

**Augustine E. Conroy II**, Director, Office of Compliance Monitoring in the Office of Pesticides and Toxic Substances, Headquarters, came to EPA as Branch Chief of the Pesticides Enforcement Branch.

"The pesticides program in EPA was the first to initiate the enforcement action and civil penalty process," he says. "It was a great day for me when I went to Alabama to testify in the very first such case.

"Pesticides and Toxics led the way into hardball enforcement by initiating the civil penalty processes that are now a part of most of the agency's compliance efforts."

**Robert Dodson**, Branch Chief, Financial Reports and Analysis, Office of the Comptroller, Headquarters, started as an accountant assigned to help set up the Finance Office for the Research Triangle Park unit in Durham, N.C.

"In 1974, I was one of ten people assigned to establish the agency's fund and document control processes," he remembers. "We worked night and day for months to come up with a 200-page manual that governs the movement of about five billion dollars a year through EPA's various programs.

"Many people working in enforcement, regulation, research, community planning, and emergency response may not think this exciting, but when we completed that task, we had given to all of them a system that assures the fiscal integrity that is important to what every program does."

**Richard J. Guimond**, Director, Criteria Standards Division, Office of Radiation, Headquarters, one of 600 Public Health Service officers transferred to EPA, started out instructing federal, state, and local officials on radiation problems.

"The most exciting EPA experience," he says, "is one in which I'm involved right now—the investigation of indoor radon nationally and particularly in Pennsylvania, New York, and New Jersey.

"This is one of the most significant public health problems I've run across in the past 15 years, because of the size of the threat to the public and because of the difficult policy problems related to the fact that the threat is in private homes. Ten years from now I hope I'll be able to say this was my most memorable experience because we were able to deal successfully with a difficult policy issue and an intriguing scientific problem."

**Robert Hardaker**, Chief, Planning and Implementation Branch, Planning and Analysis Division, Office of Municipal Pollution Control, Headquarters, began as a program analyst in the Federal Activities Branch of the division.

"We were a small group whose job it was to create and initiate the National Pollution Discharge Standards Program," he recalls. "We accomplished a great deal with very little in the way of resources. We had to establish the whole permitting and standards setting process, and we did. What's more, we met our deadline of issuing permits to all major dischargers by 1974.

"What we began with just ten people at headquarters in 1971 now involves about 1,000 throughout EPA."

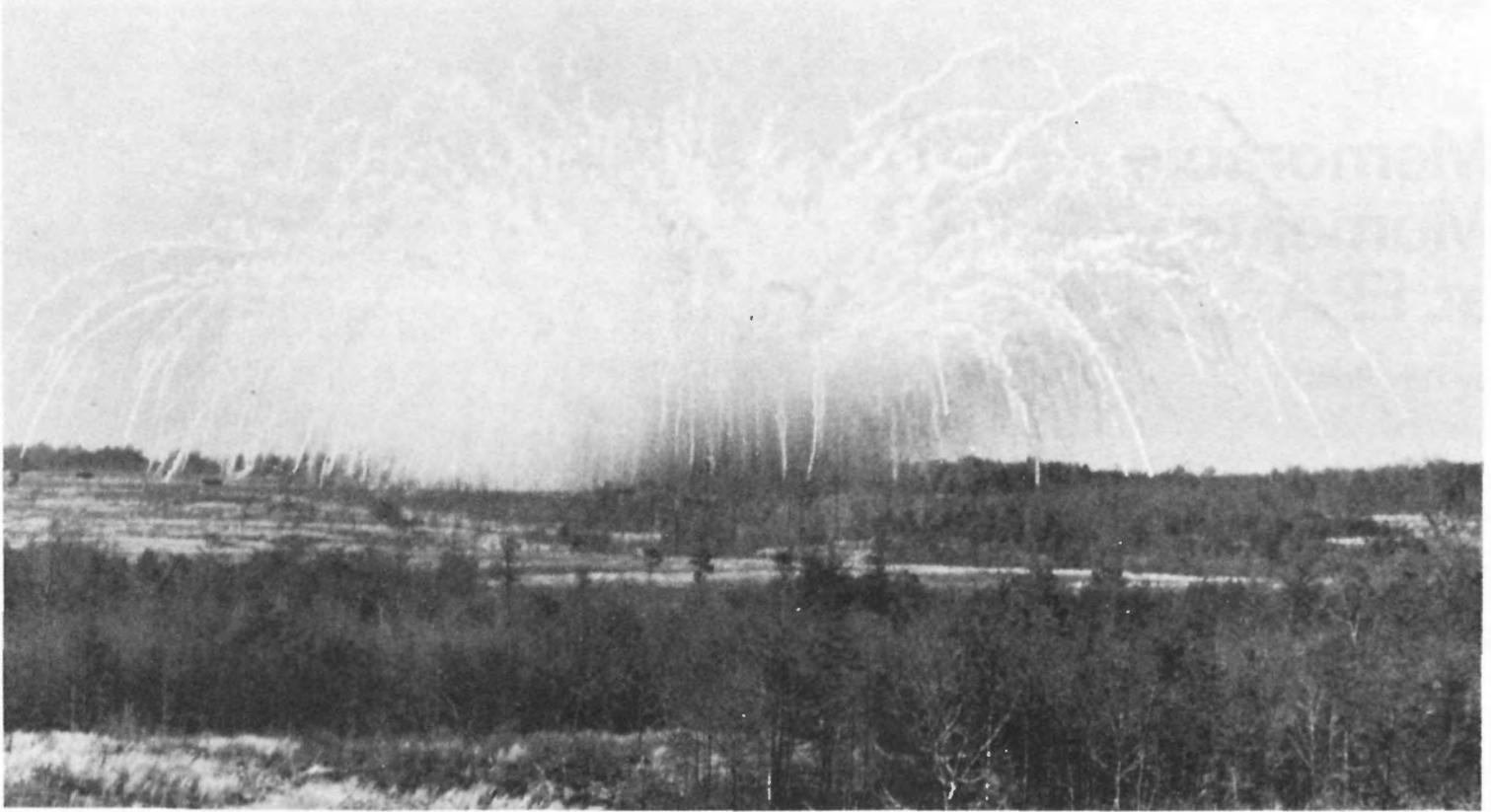
**Kenneth Hokanson**, Research Aquatic Biologist at the Environmental Research Laboratory, Duluth, Minn., came to EPA as a researcher, rose to be chief of the laboratory, and is now back at the scientist level.

"My specialization is studying the thermal requirements of fish," he explains. "This may sound esoteric, but it is directly related to EPA's mission of controlling lake pollution to protect fish and other living organisms.

"Our research has found that EPA standards and criteria for certain kinds of pollution that affect water temperature have been greatly overestimated in the laboratory. By doing our research in the real world of the lakes, we found that the standards can probably be lowered without harming the fish. This could lower industry costs for meeting EPA anti-pollution standards. What is memorable about this is that our research team has sharpened EPA's scientific methods and degree of accuracy as it relates to risk assessment and, ultimately, to risk management."

**Joseph Lafornara**, Chief, Analytical Services, Emergency Response Team, Edison, N.J., joined EPA as a research chemist in the Office of Research and Development at Edison to work on ways to detect the source of mysterious oil spills.

"In March 1979, I was sent to Hagerstown, Md., to help deal with 89 drums of reactive white phosphorus that had been damaged in an accident," he recalls. "They were sitting in two trailers, cooking and waiting to go off in the heart of downtown Hagerstown. I was able to help use the authority of EPA to get the Army to move them to



Fort A. P. Hill in Virginia where they were safely blown up.

"Although the arrangements involved went all the way up to the White House, the incident received little public attention because it happened at the same time as the accident at Three Mile Island."

**Francis T. Mayo**, Director, Water Engineering Research Laboratory, Cincinnati, Ohio, joined the EPA water pollution enforcement program in Region 5, Chicago, Ill.

"The most exciting years were my six as Administrator of Region 5," he remembers. "And the most memorable time was the sequence of events leading to court actions that resulted in closing down the open hearth furnaces at U.S. Steel's South Works at Gary, Ind., at Christmas in 1974 and the coke ovens at the same plant a year later. Those actions were taken because of the massive air pollution the facilities caused. In a way, we were giving the people in the area clean air to breathe for Christmas."

**Patsy McKenzie**, Equal Employment Opportunity Officer at the Environmental Research Laboratory, Las Vegas, Nev., with EEO "area director" responsibilities for labs in Las Vegas; Ada, Okla.; Corvallis, Ore.; Denver, Colo.; Duluth, Minn.; Gulf Breeze, Fla.; Athens, Ga.; and Narragansett, R.I., joined EPA as Personnel Assistant to the Director of the Las Vegas lab.

"For me, the most memorable experience is the way EPA employees were involved in the agency's early development," she recalls. "People came from Headquarters to tape interviews with employees in the field about how we felt about everything from the symbol—we had a lot of jokes about the flower—to the agency's goals and how to reach them. Then, on a single day, we all met in our locations across the country and heard from the first Administrator, saw a slide series in which we could identify colleagues from our lab, and were told about the EPA and its future. Afterwards, our local administrator talked to us about how we fit into the EPA picture."

"I've spent all my working life in government, but this was the first time—maybe the only time—an agency pulled in all its people to tell them where the agency was going, why it was doing so, and how it hoped to get there. For a bunch of people with environmental concerns and consciences, it was a memorable beginning."

**Wayne Ott**, Team leader in Air Toxics and Radiation Monitoring Research, Office of Research and Development at Headquarters, began with EPA as a junior engineer in the Air Pollution Research laboratory, Cincinnati, Ohio.

"In those days, we'd dream of the kinds of studies we'd like to do," he recalls. "One dream was to do human exposure studies that would help us learn just how much exposure to toxics an individual had suffered, how much that individual's body had absorbed and accumulated."

"In the 1980s we finally achieved the advanced technology and the funding to begin such studies. Seeing the results has been exciting. What they tell us about indoor air pollution is opening up that field of environmental concern. The results produced to date have the potential for revolutionizing the way we collect data on environmental conditions."

**William L. Richardson**, Chief, Large Lakes Laboratory, Grosse Ile, Mich., came to EPA as Chief of Field and Lake Operations in Region 5, Chicago, Ill.

"Although one of my most significant assignments was being on the team that negotiated U.S.-Canada environmental agreements," he says, "my greatest personal satisfaction comes from

*Following detonation of one drum of white phosphorus in 1979, a plume spreads 1,500 feet over an Army post near Richmond, Va. EPA's Joe LaFornara recalls that a total of 89 drums damaged in a trucking accident had to be similarly detonated one by one to prevent chance fires and explosions.*

something most people would think very dry, even though it has to do with lakes. This was being involved in the efforts to model the Great Lakes on computers. Developing computer models of the Great Lakes made it possible for the U.S. and Canada to determine that phosphorus had to be targeted and then to control the phosphorus levels in the Lakes.

"Our mathematical modeling led to international cooperation in field operations and to international environmental policy development."

**Diane Bazzle**, Director, Office of Executive Support, Headquarters, joined EPA as an intern in the Office of Personnel.

"Working in EPA has been a long-running memorable experience," she says. "Fifteen years ago it was as if we were starting out with a newborn child. We have seen the child grow into a responsible adult. My experience began with the enthusiasm of setting up a new agency, then watching it focus on different environmental problems and the human resources needed to deal with those problems until the agency focus broadened to include the entire environment.

"Probably the single most memorable day I've experienced at EPA was the day Bill Ruckelshaus returned to the agency. The enthusiasm of the employees was a joy to watch."

**Gloris Butler**, Manager, Public Information Reference Unit, Headquarters, began as a public information specialist in the Office of Public Affairs.

"My experience has been a series of personal high spots, but the early days were the most outstanding," she recalls. "We were a close-knit, environment-conscious group, working to build an agency. There was great people-to-people communication.

"I hope that as EPA moves away from the '3 R's' to high technology we won't be weakening the people bonds and creating future communications gaps."

**Han Tai**, Research Chemist at the Environmental Chemistry Laboratory, Bay St. Louis, Mo., joined the pesticide laboratory the day it became part of EPA.

"My earliest EPA experience was notable in its own right," he says. One day I was setting up shop in a converted Quonset hut on a military base; the next day I was carrying boxes of equipment to a modern EPA lab at the NASA facility 40 miles away.

"But the highlight of my EPA experience was in 1973 when the lab got a rush order from headquarters to see how finely and accurately dioxin levels could be detected. At the time, dioxin detection was in parts per thousand. We were asked to think in terms of parts per billion and trillion—I had to ask myself, what is a trillionth?"

"We started from scratch and worked against a two-week deadline. In that two weeks we developed the detection and measuring process that is used today. The pesticide field is one in which there has been constant change over the last 15 years, but there we were, producing a major change in just two weeks."



Great Lakes National Program Office

*An observer picks up globs of algae in Lake Michigan. William Richardson at EPA says his greatest professional satisfaction came from developing computer models of the Great Lakes to determine and control nutrient levels that were contributing to pollution.*

**Faith Cole**, Biological Oceanographer, Hatfield Marine Science Center, Newport, Ore., joined the agency as a biological laboratory technician in Corvallis, Ore.

"Twice, I've had an unusual opportunity to study the impact on the environment of wastewater treatment and advances in wastewater treatment methods developed by EPA," she says.

"The first time, I left the laboratory bench for a small ship in the Atlantic to help find out what happened to sludge dumped into the New York Bight. Working out of New York City and sailing on the Atlantic Ocean was quite a change for a country girl from Corvallis.

"My second major experience was closer to home as part of the team that recently studied the Los Angeles sewer outfall; we were able to see directly the reduction in off-shore pollution that resulted from Los Angeles' adoption of new wastewater treatment methods."

**Marcia Williams**, Director, Office of Solid Waste, Headquarters, started as a mathematician in the Office of Research and Development, Research Triangle Park, Durham, N.C.

"In a career that has had many significant moments, my most memorable was the trip I made last year to India to represent the United States in helping the Indian government develop an environmental protection program," she says. "It was an outstanding and exhilarating opportunity to share with an industrializing nation the incredible amount of information we have amassed on environmental protection. That information gives India the opportunity to avoid the many mistakes that were made in this country." □

## AIR

### Ethylene oxide and chloroform

EPA announced its intention to list both ethylene oxide and chloroform as hazardous air pollutants under the Clean Air Act.

This action triggers the collection of data leading to the probable proposal of standards for these pollutants.

Ethylene oxide is classified as a probable human carcinogen readily absorbed through the respiratory and gastro-intestinal tracts. Several studies have shown that it is widely distributed in various tissues following inhalation exposure.

Chloroform is classified as a probable human carcinogen based on ingestion exposure studies. Though there are no inhalation exposure bioassay studies currently available, EPA takes the position that chloroform should also be considered carcinogenic by way of inhalation and believes it prudent to assume inhalation potency is the same as that derived for ingestion.

### 1,3-Butadiene

Actions have been taken involving the chemical 1,3-butadiene under both the Clean Air Act and the Toxic Substances Control Act.

The agency intends to list the chemical as a hazardous air pollutant under the Clean Air Act. This action triggers further evaluation that could lead to the proposal of standards limiting emissions of 1,3-butadiene.

In addition, EPA is submitting a report to the Occupational Safety and Health Administration (OSHA) concluding that workplace exposures to 1,3-butadiene present an unreasonable risk of injury, and formally referring the

chemical under the Toxic Substances Control Act to OSHA for possible regulatory action.

The major use of 1,3-butadiene is in the manufacture of synthetic rubbers, plastics, and resins. Some of the end products include automobile tires, high impact plastic used in autos, appliance parts and pipe, and synthetic fibers. The chemical is also used as an intermediate to produce a variety of industrial chemicals.

## PESTICIDES

### Wood Preservatives

A settlement agreement on regulatory measures covering the distribution, sale, and use of pesticides for preserving wood has been reached by EPA and major parties representing the wood preserving industry. However, the issue of what hexachlorodibenzo-p-dioxin (HxCDD) contaminant level will be imposed for pentachlorophenol products was not resolved by the settlement.

Specifically, the settlement agreement includes provisions for restricting most uses of wood preservatives to certified applicators; label changes governing the use of the preservatives; and measures to reduce worker exposure, including the wearing of protective clothing. For the limited number of creosote uses not restricted to certified applicators, the industry has agreed to adopt stringent packaging and labeling restrictions for the affected products and to institute a mandatory, EPA-approved training program for all applicators.

### Grain Fumigants

EPA announced that three fumigants used to control insect infestation in stored grain—carbon tetrachloride, carbon disulfide, and ethylene dichloride—are going off the market.

Sale and distribution of these products will end on December 31, 1985. Leftover stock may be used through June 30, 1986. All of these products are being voluntarily cancelled or have been suspended because EPA received no response to its test requirement notices.

## TOXICS

### Chemical Imports

The agency is fining 12 companies a total of \$90,000 for failing to comply with its chemical import certification requirements. Three other companies also were fined a total of \$75,000 for violating chemical testing requirements. These are the first enforcement actions to be taken by EPA for import violations under Section 13 of the Toxic Substances Control Act and testing violations under Section 4.

## WATER

### Drinking Water Protection

EPA announced it is proposing recommended maximum contaminant levels (RMCLs) for 37 chemical (plus 2 by-products) and 4 microbiological contaminants that could be harmful if found in the drinking water supplies at significant levels.

The proposed goals are the first step in restricting levels of chemical and biological contaminants sometimes found in drinking water sources. Twenty-six synthetic organic chemicals are covered in this proposal including PCBs (polychlorinated biphenyls) and numerous pesticides including aldicarb. PCBs are used as liquid coolant and insulating material in electrical equipment.

Aldicarb is a highly toxic pesticide that has been found in some ground water in agricultural areas.

The proposed rule also covers 11 inorganic chemicals including lead and mercury.

In addition, EPA announced RMCLs and proposed maximum contaminant levels (MCLs) for a group of eight chemical compounds that could also cause health problems if they are found in drinking water supplies at significant levels. The agency also proposed monitoring requirements for 51 additional compounds for public water systems.

### Pesticide Industry Rule

A final rule has been issued by EPA to control the discharge of wastewater pollutants from the pesticide chemical industry.

The rule covers effluent limitations for three subcategories of pesticide industry plants: organic pesticide chemical manufacturers, metallo-organic pesticide manufacturers, and pesticide chemical formulators and packagers. EPA developed the final limits and standards from data collected by the agency and supplied by the pesticide industry.

Implementation of the rule will remove annually an estimated 1,983,500 pounds of pollutants, including 1,139,500 pounds of toxic pollutants. □



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