United States
Environmental Protection
Agency

Office of
Public Awareness (A-107)
Washington DC 20460

Volume 6
Number 10
Nov/Dec 1980

# EPA JOURNAL

## DECADE OF THE ENVIRONMENT

America
As Seen From
Space.

# Decade of the Environment

A new government organization, the U.S. Environmental Protection Agency, was born on December 2, 1970. In this issue EPA's present and past leaders review significant contributions to the sweeping advances in environmental consciousness and progress that marked the 1970's.

The Agency appeared on the national scene at a time when environmental pollution had become so critical that getting started was described by William Ruckelshaus, the Agency's first Administrator, as like trying to remove your own appendix while running the 100-yard dash.

From its inception, EPA has been a lively, dynamic, and inevitably, sometimes controversial institution.

Its approximately 10,000 full-time employees serve a cause that rises above any political party, stretches beyond national boundaries, and will protect generations yet to draw their first breath. Conservative and liberal, we are locked together in our battle against the great waste—pollution—which hurts us all.

The Agency owes its existence to the thousands of citizen activists who began working to curb environmental ills long before EPA was established. It has been sustained by the deep and continuing support of the public.

In addition to commentary by EPA's past and present leaders, this issue includes:

A survey of national leaders in a wide spectrum of activities reporting their opinions about the most significant environmental accomplishments in the past decade.

A report on a new public opinion survey which shows that strong support for environmental protection continues.

A photo essay showing some of the major environmental problems of the past decade.

A report on the landmark National Environment Policy Act by William Hedeman, Director of EPA's Office of Environmental Review.

An article on EPA's new consumer program and a fact sheet on eight major laws that give the Agency its authority.

For the cover of this issue of EPA Journal marking the Agency's 10th Anniversary, we have used a photograph of our planet to help reemphasize the point that we have only one livable Earth.

Contemplating what happens if we irreparably foul our only supply of air and water should, as Samuel Johnson remarked about the prospect of being hanged, help concentrate our minds wonderfully.

Indeed, our very best thinking will be required to cope with national as well as international problems such as acid rain and ozone protection that affect the peoples of the world. For, as the poet Archibald MacLeish wrote, we are all "riders on the earth together." □

United States
Environmental Protection
Agency

Office of
Public Awareness (A-107)
Washington DC 20460

Volume 6
Number 10
November/December 1980

# EPA JOURNAL



EPA is charged by Congress to protect the Nation's land, air and water systems. Under a mandate of national environmental laws focused on air and water quality, solid waste management and the control of toxic substances, pesticides, noise and radiation, 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.

## Articles



## Departments



Front cover: A view of the United States through cloud cover, with the Gulf of California in Mexico in left foreground, photographed by the 1972 Apollo 16 crew as they entered the moon's orbit after being rocketed into space

Opposite. American and EPA flags rippling in the breeze at Agency headquarters in the Nation's Capital.

Photo credits:
National Aeronautics and Space Administration; Tennessee Valley Authority; Division of Tourist Development, Maryland Department of Economic and Community Development; Denver Convention and Visitors Bureau; Stephen C. Delaney; Gerald S. Ratliff, West Virginia Department of Commerce; Paul De Georges; Utah Travel Council; DeAngela Mitchell; Chen/jr., United Nations; City of Detroit; Frank Wolfe; Jack E. Boucher, National Park Service, and Dennis Hart.

Design Credits: Robert Flanagan, Donna Kazaniwsky and Ron Farrah

The EPA Journal is published monthly, with combined issues July August and November December, by the U S Environmental Protection Agency Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget

# The Next Decade

An Interview With
Douglas M. Costle
*EPA Administrator*

**Q With a new Administration coming to Washington in a few weeks, do you feel the role and mission of EPA will undergo major changes in the next four years?**

A I believe it's important to remember that the mission of EPA is directly tied to a number of very real environmental problems facing this country. Those problems will remain, as will the challenge to find constructive solutions.

The new Administration undoubtedly will have new approaches and new policies for dealing with environmental issues. In addition, there probably will be revisions to some environmental laws, such as the Clean Air Act, which will dictate new directions for the Agency.

But I am hopeful that the fundamental philosophy of protecting environmental values will remain steadfast.

**Q What have the taxpayers received with the approximately $40 billion of their money spent by EPA since it was created ten years ago?**

A The bulk of that money, obviously, is in the construction grant program where EPA is helping subsidize the construction of municipal waste treatment plants all across the country. There are now almost 12,000 projects at various stages of completion. Where they've been completed, we've seen a dramatic improvement in water quality.

There have been concomitant gains in air as well, though it's harder to show the results. From 1972-1978 ambient levels of particulates (smoke and dust) were reduced 10 percent, sulfur dioxide by 17 percent, carbon monoxide by 35 percent, and lead by 26 percent. Ozone levels remained essentially stable over this period with 1979 showing a 3 percent decrease from 1978 levels. In the case of automobile-related pollution, the reductions have occurred in the face of a 33 percent increase in vehicle miles traveled.

The job is being done both at the public and private levels, of course. The Department of Commerce has estimated that the business sector spent about $160 billion (in 1980 dollars) during 1972-78 for pollution cleanup.

So what I think the American people have gotten is a pretty solid initial achievement in reversing the environmental degradation that was seriously getting out of hand ten years ago.

**Q Will EPA be needed for another ten years?**

A EPA will be needed well into our future. As we have begun aggressively dealing with pollution, we're discovering a whole generation of environmental problems, mostly related to the legacies of the chemical revolution, whether it's dump sites, hazardous waste disposal, our increasing knowledge of the potential chronic health effects of exposure to chemicals, or contamination of groundwater. We've also made a start in focusing on hazardous air pollutants.

**Q Suppose they had decided not to create a Federal EPA ten years ago. Where do you think we'd be today?**

A I don't think that that was an option. Things had gotten so bad.

One thing to remember is that Congress usually acts to mobilize the Government's efforts well after the need for it has become apparent. It usually takes a crisis atmosphere to get them to act, and it usually comes on the heels of demand for more and better Government action. Because of the public and Congressional recognition of the environmental problem, I believe if we hadn't created an EPA, we would have had something like it.

**Q Would you say the most difficult task in cleaning up has been substantially accomplished?**

A Yes, in terms of the most conventional pollutants that we were preoccupied with ten years ago—in water that's oxygen-demanding wastes, suspended solids, etc., and in air it's particulates, sulfur dioxide, and carbon monoxide. I'd say in water we have more than turned the corner. In air, it has been harder, and the gains there have been more hard fought and less dramatic.

But, even as we've progressed, a whole new set of issues has arisen—toxic pollutants in the water and in the groundwater, in landfills, in the air, the legacy of the chemical revolution.

The science of solving these problems is much more uncertain and our learning curve is very steep, both in terms of the effects of these pollutants, as well as the kinds of technologies that will be required to reduce the burdens that we're putting on our air, water, land, and, ultimately, on human health.

**Q On the proposed revitalization of the Nation's infrastructure, the industry and highways, etc., do you think there are useful opportunities there for environmental improvement?**

A Oh, absolutely. To the extent that we are going to rebuild and modernize industry, it gives

*A West Virginia stream.*

Douglas Costle

us a real opportunity to do it right, just as when we now build a new power plant, it is built with the best available control technology. In fact, I was told by one representative from an Indiana power company that they have a 2,000-megawatt power plant that today is cleaner than a 200-megawatt power plant not 40 miles away. That 2,000-megawatt power plant is a new plant, built with scrubbers. It shows you what can be done when you have an opportunity to build right.

Similarly with new steel-making processes, and virtually every industry you can name, when you modernize or replace an obsolete plant, you have an opportunity to include controls that will turn out by and large to be more cost effective because you get productivity gains from the new plant. Including controls in modernization will be far more cost effective than going back and trying to retrofit older plants and, technologically, easier than trying to go back where you've got to work around old plumbing.

So when you look at some of our basic industries—particularly industries that are dirty, using inherently dirty processes—you almost without exception get substantial gains by replacement with modern plants—substantial gains in environmental protection. It's just clear that this time around, as we build our industrial base, it would be an incredible failure of political foresight to *not* do it right, and that means solving not just the community pollution problem, but occupational safety and health problems as well.

**Q Can you cite some examples where doing it right in the first place could have avoided environmental damage and saved a lot of money?**

A Yes. Here are three:

- The chemical waste dumped into Love Canal could have been secured in an environmentally sound landfill for $4 million; instead, the State and Federal Governments will have to spend more than $50 million to contain that mess; lawsuits pending against Hooker Chemical run into the billions; and the lives of nearly 1,000 families have been scarred—in some cases, permanently.

- Similarly, PCB's illegally sprayed along North Carolina roadsides by a "midnight dumper" could have been disposed of safely for $100,000; instead, the State may have to spend between $2 and $12 million . . . and the dumpers, now bankrupt, have gone to jail.

- The Kepone disaster at Hopewell, Va., could have been prevented by an investment at the Life Sciences plant of $200,000. So far, known judgments against the company—paid by Allied Chemical—total $13 million; payments to workers for nerve damage in out-of-court settlements are unknown; and it is doubtful whether a Federal investment of several *billion* dollars could suffice to clean up the James River and its once-thriving shellfish industry.

**Q What will be the most useful role a citizen can play in the future to help prevent environmental degradation?**

A While we'll continue to fight a lot of battles in Washington, particularly when it comes to setting national standards, the real environmental battles are in the local trenches, where new factories are being built and new power plants are being sited. There, the insistence of local people that it be done right, and that they be built as clean as possible is crucial. The fastest way to an informed citizenry is participation by that citizenry in decisions that affect them, that are important to their own lives. So I think that involvement, that is, getting involved in local issues, is still the most important thing citizens can do, because that is self-educating and has a direct bearing on the outcome of their own lives. It's tangible. It's not like trying to follow a debate 2,000 miles away in the halls of Congress.

The second most important thing will be to continually impress upon the politicians they elect, whether it's County Councils or Governors or Congress that environmental protection is very much a part of our political value system now. There is growing pressure from organized interests to resist the imposition of environmental laws, and it is a more organized and financially backed effort than existed ten years ago.

Frankly, the elected representatives will bear a substantial part of the burden of resisting incursions by narrow, special interests in the area of environmental protection, and they can only do that if they feel the people who sent them to office in the first place really care and are watching how they behave. Sounds like Civics 1, but it's true. And I think, incidentally, that it's going to happen that way because, when I look at the polls, in the most recent polls, particularly, I see, not only a growth in the number of people who are concerned and care about environmental protection, but I also see that it cuts across the political spectrum. You find it from conservatives, liberals, and progressives.

When you look at the demographics of those polls, they indicate how young people feel. These are young people who will be taking over our institutions as time goes on, and they care even more intensely than the generation that they will succeed. Environmental protection is bedrock in their political values. In terms of fundamental change in our political value system, environmental concern has basically taken hold now, and that's an irresistible political phenomenon.

**Q Do you think State and local government will assume a more significant role in environmental protection?**

A Oh, I think they are even now. The bulk of the laws that were passed in the decade of the 1970's contemplated a partnership between Federal, State, and local government, with

State and local government having a pivotal role. The municipalities are building the waste treatment plants. State governments are regulating pollution sources across the board.

We come back to the basic reality that EPA does not by itself have anywhere near adequate numbers of people and resources to go out and do the job itself. We have to rely on amplifying those resources through State and local government.

One other comment on this. One of the things we've tried to do, obviously, since the Agency started, was to support the development of strong environmental programs at the State and local level, and then, as those programs reach maturity, delegate more authority and responsibility, too. Nowhere is that more clear than in the water program and construction grants, where we're going through a transition of delegating more and more responsibility to State and local government. With that delegation, of course, comes political accountability, which ties back to what I said earlier about the need for local people to become involved because they can hold State government accountable even more readily than they can hold a distant national government accountable.

**Q Would you comment on the recent trip you took down the Colorado River? Did it give you any insights or inspiration?**

A It reminded me that there is a lot of open country left, but even so, it's feeling pressure from man's intrusion. The area I visited is very close to that which will be subjected to intense energy development pressure. I drove through the Piceance Creek area on my way up to Dinosaur National Monument, and there is a fragile character to the ecology of that region. It will take real determination and judgment to ensure that that area is not ruined in the process of developing energy resources. There is a lot that can be done that will mitigate the effects of industrial development.

My trip reminded me of how magnificent some of the country is in terms of just sheer grandeur. That trip included several days in the Colorado Rockies and down to Dinosaur which is at an entirely different elevation. Of course, in that region the ecology changes dramatically with every few thousand feet of elevation, and there is suddenly very barren, rugged country in parts of Utah, after the very lush mountains in Colorado, and then as you climb another thousand feet out of the Dinosaur area, you find yourself suddenly in the Flaming Gorge National Recreation Area which is all mountain land again, and then you drop down in elevation past sagebrush country, vast expanses of it.

Then, as you move north to the Teton Mountains, you rise in elevation again; you see Bridger Range that's converging right there close to Jackson Hole, and then you're in that magnificent area, the Bridger Park National Forest, Grand Teton National Park, and Yellowstone National Park which represents about 20,000 square miles now that are contiguous in one way or another—land running everywhere from fairly well-developed parks that get a lot of visitor pressure to real wilderness areas that very few people ever set foot in. It is a magnificent national heritage for this country. And then we drove back to Denver. So in that loop, we really captured what is unique about the West—the thing that struck me so forcefully is the diversity even in that fairly limited piece of geography.

The area near Dinosaur is rich in history. It is right between Robber's Roost and Hole in the Wall, which is where Butch Cassidy and his gang used to hang out. Then, coming back from Yellowstone and the Tetons, you go through the Overland Stage Route across the sagebrush plains, then through Bridger and Laramie and down to Fort Collins. That is an area that is going to be stressed by energy development, and we're going to have to be very careful that we're not going to lose the essential uniqueness of that area and its historical and natural resource heritage.

**Q Would you comment on what you think are the most serious international environmental problems?**

A Probably the most serious problem is that we lack sufficiently developed international institutions for resolving problems that are here and now. We're increasingly finding that environmental problems are transnational in character. Air pollution is one example. Pollution of the oceans is clearly multinational and transnational in scope. In a sense we live on a shrinking globe with the actions of one nation impinging on another and possibly impinging on an international resource. Our international institutions often appear terribly sluggish in trying to cope with these concerns. It took six years really to debate and discuss and get to the point where last year we could sign an international convention for the first time to deal with trans-boundary air pollution. Now we see a lot of regional international efforts to deal with water quality. Mediterranean nations, for example, have banded together in an explicit program to begin to clean up water pollution in the Mediterranean that threatens that sea. I think nations are responding to the threat of environmental degradation, but it seems, oftentimes, a slow process, and we are at the same time discovering specific problems—chlorofluorocarbons, trans-boundary air pollution, the longer range problem of carbon dioxide buildup, the greenhouse effect, desertification and loss of tropical forests.

*Continued to*

# A Challenge to EPA

By William D. Ruckelshaus

While ten years have passed since EPA was launched, my memory of its beginning is still strikingly vivid. At 20th and "L" Street, our first headquarters, we were a mixture of political and career government employees charged with excitement and challenge. The issue of the environment had exploded on the country like Mt. St. Helens. A combination of factors like the disillusioning effect of the Viet Nam war, Rachel Carson's "Silent Spring," the inescapable visibility of air and water pollution, the advent of color television, the tendency of Americans in the 1960's and 70's to embrace causes, and it needs to be said, the underlying substance of our concern about the impact of man's activities on the essentials of life, all led to the explosion. The result was EPA and counterpart agencies in most of the States, a flood of environmental and health related laws and regulations, and the inevitable conflict that accompanies social change.

My own view of the nature of the environmental problem changed rapidly during the early months of my tenure at EPA. Given my background as a lawyer in and out of government, and my limited exposure to the lack of scientific certitude about pollution while trying to enforce rather crude air and water pollution laws in the State of Indiana, I entered EPA with some basic assumptions. I thought we knew what the bad pollutants were, where they came from, at what levels they caused harmful environmental or health effects, how to measure pollutants in the air and water and, finally, how to control pollution to acceptable levels at reasonable costs. The core of the problem, I felt, was that we had delegated to the States the enforcement responsibility and, since they compete so fiercely for the location of industry within their borders, they weren't very good enforcers. Centralizing the enforcement responsibility in the Federal Government would soon solve our environmental problems. It might have, if my basic assumptions had been correct, but it soon became clear to me that none of them were.

We had identified only some of the bad actors. With disturbing regularity we uncovered "new" pollutants that harm us or our surroundings. We do know a great deal about the origins of pollution, but too much of it comes from nonpoint sources to make its control simple. Our ability to pinpoint the adverse health or environmental effects at a given concentration, or measure those adverse concentrations in the air or water, varies greatly with the individual pollutant and media in which it is found. Lastly, while we can technologically virtually eliminate pollution, the costs to the society are enormous and in some cases prohibitive. All this is to say things weren't as they seemed to me at the creation.

Unfortunately, many of our pollution laws passed in the flush of our early concern embodied many of my erroneous assumptions. For both air and water cleanup, we created a standard enforcement process which, by law, mandated for the whole Nation perfectly healthy air by 1975 and waters that would be "fishable and swimmable" shortly thereafter with 1985 as the date by which no pollutants would be discharged into our streams and lakes. I have become increasingly disenchanted with our society's tendency to set for itself goals which are either impossible to achieve or unwise to pursue. Leaving that bias aside, which I recognize is challenged by those who believe inspiration and progress only come from reaching beyond our grasp, the promise by law of more than EPA could deliver has taken its toll.

In the last decade, great progress has been made in improving our environment by any standard. And it has been made in the face of continued industrial and population growth—the two great contributors to pollution. Setting for ourselves unachievable goals of perfection has greatly inhibited our ability to measure progress and thus to reassure the American people that we are grappling successfully with our own complexities. Clearly we have not reached the millennium in our efforts to guarantee a global future. New and vexing problems like toxic dumps and acid rain, to mention only two, crop up almost daily. But we have awakened to the darker side of viewing air and water as free, limitless commodities and to the thoughtless application of new technology. We are striving mightily to cope. From that effort we should take pride and instill public confidence that all is not lost. The time for hand-wringing has long since passed.

The American people do understand that we have a problem in cleaning up our environment and protecting public health. They overwhelmingly support efforts to address this problem. It is my conviction that if the public better understood both the complexity of our undertaking and the ten-year determination of our government to successfully respond to the public will, they would support the rationalization of our environmental laws. It is not my purpose here to dive into the morass of arguments about what changes are needed in our laws to make them better serve the public interest. At the least they should conform our goals to social reality and provide EPA with a framework within which continued progress can be made and measured by the Congress and the American people.

Since leaving government rather suddenly one Saturday night, and finally lighting in my present position with Weyerhaeuser, I've often been asked, "How does it feel to have changed sides?" The notion that our government and American industry are on opposite sides is one of the most socially corrosive perceptions in America today. I never thought of myself in government as being on the "other side" of American industry. I was a servant of the people charged with the responsibility of acting in their interest. The public interest is complicated enough for a government official to divine without further confusing his thought process by depicting the industrial segment of our society as the adversary. No other developed nation in the Free World pits its government against its industry quite the way we do. I believe it is a stance we must drop in the future if our society is to continue to prosper and successfully compete. It will take restraint,

*Continued to page 38*

# EPA's Task

By Russell E. Train

There were those at the start of the 1970's who predicted that, as soon as times got tough and the bills came due, the country's commitment to environmental improvement and integrity would evaporate as swiftly and suddenly as it had seemed to emerge. Yet, as the polls have shown, EPA's experience over the years has only strengthened that commitment. The energy crisis, together with the mounting evidence that pollution is even more widespread and harmful than the Nation had realized, has increasingly brought home the fact that "environment" is not simply another problem to be solved or crisis to be surmounted. As William Shannon, formerly of the New York Times and currently U.S. Ambassador to Ireland, once said, it is the overall and underlying context within which we must weigh and deal with the various economic, energy, and other crises and problems that confront us.

If EPA's efforts seem to reach out and touch the lives of every American, that is because the health and well-being of every American is directly affected by the condition and quality of his or her environment. The Agency has, as its constituency, not a single, separate segment of our society actively involved in environmental causes, but every American who lives and breathes —as well as millions upon millions of Americans who have yet to take their first breath. It is precisely for that reason—because environmental concerns are such a vital and inescapable fact of every American's life—that the job at EPA is so demanding, so difficult, so controversial, and so well worth doing. It is that sense that the environment is something really worth caring and doing something about that has seen the Agency through some very rough experiences.

It is worth reminding ourselves that the environmental effort did not spring up overnight and out of nowhere, and that we had air and water and other environmental laws on the books long before the start of the 1970's. It was not just a few activists, but a broad cross-section of the American people as a whole, who decided that these laws just had not worked adequately, that we could no longer afford halfway measures, and that environmental hazard and harm had reached levels we could no longer tolerate. It was in response to this gathering public consensus that the Congress began to construct a comprehensive set of programs that would, as a matter of national policy, make environmental concerns an important part of our lives.

## Long-Term Damage

We knew that such an effort would be costly. But we also understood that society was already bearing heavy costs in one way or another—in the loss of recreational uses of rivers and beaches, in the increased treatment costs of our drinking water, in the cost of managing the mounting volume of solid wastes in and around our cities, in the damage from air pollution to buildings, farm crops, and forests, and most importantly in human suffering and death, medical and hospital bills, and time lost on the job because of illness. We were also beginning to understand that pollution frequently imposes long-term damage to entire ecosystems with costs that could well be enormous in terms of future human welfare, although largely unquantifiable in any immediate sense. As a result, the Nation fashioned a set of programs that, by requiring the reduction and control of pollution at the *source*, would not only shift the costs of pollution from the shoulders of society as a whole onto those of the polluter, but would encourage the development of processes and practices that generate less pollution in the first place.

Americans have since run into not only very real and rising economic and fiscal constraints, but other kinds of constraints as well—energy, agricultural, and social, among others. Nor should that come as any surprise: the more society succeeds in taking environmental concerns and costs into account in its activities and institutional arrangements, the more the environmental effort itself must take other important concerns and costs into account.

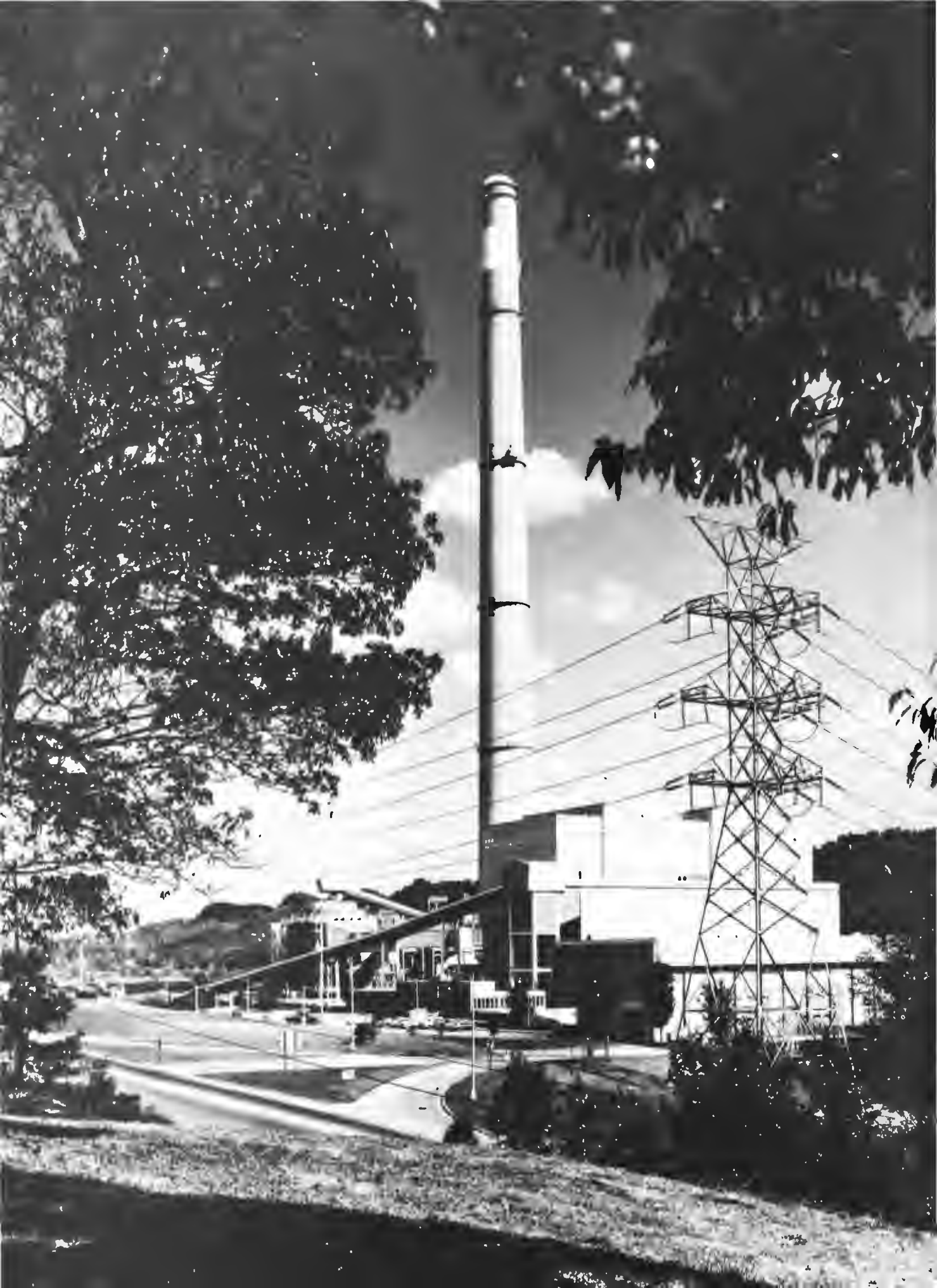
There are, however, those who continue to argue that environmental regulation, in and of itself, is an undesirable constraint on growth and to ignore the fact that it is pollution, not its regulation, that constitutes the real constraint on economic or any other human activity that raises the level of harmful environmental pollution. If pollution with its adverse effects on human health were to be unchecked, I am convinced that even current levels of industrial activity would soon prove unacceptable. Our society simply would not accept economic or other growth at the expense of widespread harm to human health and a degraded quality of life.

## Reckoning Environmental Costs

It should be clearly understood that EPA is an entirely different "animal" from such traditional regulatory agencies as the Interstate Commerce or Federal Power Commissions, whose job is to get rid of obstacles and inefficiencies that keep market forces from operating freely. EPA was established not to keep these forces from operating, but to make certain that they operate in the public interest by insuring that the market increasingly takes into account environmental costs that it would otherwise exclude from its calculations. Left unregulated in a highly advanced industrial society, most of the normal economic incentives of a competitive, free enterprise system tend to work to encourage the disposal of vast volumes of wastes into the environment, at the rapidly increasing expense of the public health and welfare. Regulation (or an alternative or complementary system of economic changes) is required to internalize this expense, thus utilizing the free market system to achieve pollution abatement with greater efficiency and at least cost.

EPA could make no greater mistake as an Agency than to behave as if it were simply and solely an advocate for the environment in an adversary proceeding. In

*Continued to page 38*



# Believing in the Future

By Barbara Blum
EPA Deputy Administrator

The greatest opportunity for a clean American environment lies in a healthy, revitalized economy.

If we are going to retool our automobile factories or rebuild steel plants, that's a tremendous opportunity to build in better environmental protection.

Rebuilding America's industrial capital base provides a big chance to attain economic as well as environmental goals. It is far easier and cheaper to build a new plant in an environmentally sound and occupationally safe way than to retrofit later.

To put it another way, given the Nation's commitment to ecological and economic goals, a policy which does not address environmental health and safety problems in the course of rebuilding or revitalizing industry would be unconscionable. Such a policy would almost guarantee that our existing environmental problems would be with us for the long term while plaguing the economy with wastes, health bills, and obsolete industrial processes.

To help gain a healthy environment and a healthy economy through reindustrialization, we need a strong partnership between industry and environmental forces. A common vision and a common effort are needed, a dream of an American economy that works, producing a good life at reasonable cost, in an American environment that is safe and clean.

Acceptance of reasonable environmental and health regulation can actually speed up the process of bringing industries back to health. Phillip Caldwell, Chairman of the Board and Chief Executive Officer of Ford Motor Co., has applauded the "opportunities" governmental regulation has provided for initiating major changes in auto design that are creating a "new market."

In fact, national environmental concern and cleanup efforts have been a key catalyst for the great American awakening over the past decade to the need for a fresh approach in some of our industries, such as autos and steel, in energy consumption and and in urban development.

The current hazardous waste problem illustrates what it has cost *not* to pay attention to the environmental dimension in the Nation's activities. The results of improper disposal of toxic and hazardous wastes are now evident in every part of the Nation. Public drinking water supplies and irreplaceable aquifers have been destroyed, surface waters have been rendered unusable, fires and explosions have threatened whole communities, and the health of substantial numbers of people has been threatened by exposure to toxic pollutants in the air and water. The damage could have been avoided by preventive measures that would have cost a pittance compared to the hazardous waste cleanup bill the Nation faces now.

EPA has established hazardous waste enforcement, cleanup, and control as its first priority. This sense of urgency also is reflected in State programs and in the efforts of concerned citizens and environmental groups.

The payoff from environmental protection is becoming more and more evident. According to a recent review, the most reasonable estimate of benefits to Americans in 1978 from improvements in air quality since 1970 was $21.4 billion. This included reductions in pollution-related death and illness, savings in cleanup costs, increases in agricultural production. The review concluded that the most reasonable estimate of the annual water pollution benefits that will be accruing by 1985 is $12.5 billion. Benefits include recreation, reduced waterborne disease, and lowered municipal waste treatment costs.

Meanwhile, pollution control is one of the fields in which Yankee ingenuity can pay off big for the creators and the public —where one can do well by doing good. Here are some examples from the Environmental Industry Council:

—An $8 million pollution abatement system installed by the Great Lakes Paper Co. reduced the plant's operating costs by $4 million a year.

—Burners to reduce air pollution at a Florida power plant lowered operating costs and reduced fuel consumption by 4,000 barrels of oil a year.

—The Glass Containers Corp. of Dayville, Conn., developed a large glass recycling program after discovering that 50 to 100 percent of a batch of molten glass could consist of used glass. During 1978, the firm reused more than a billion glass containers.

—Garden State Paper Co., an affiliate of Media General, Inc., of Richmond, Va., annually recycles about 600,000 tons of used newspapers to produce 14 percent of all newsprint manufactured in the U.S. The system is less energy-intensive than the virgin newsprint manufacturing process.

Some have argued that environmental programs will stop economic growth. But as these examples show, just the opposite may be true. Pollution cleanup can *stimulate* innovation and growth. It is *pollution* that threatens growth. In the 1950's and 1960's pollution was spoiling the quality of our cities, our recreation, and our goods and services. Our economic "progress" was illusory, because the price we were paying for uncontrolled waste was draining away the benefits of growth.

The Nation's cleanup effort has led to the creation of a whole new industry that is making money from protecting the environment and employs about two million people. Annual sales growth for the industry is about twice the nine percent annual

*Electrostatic precipitators have been added to help TVA's Bull Run power plant control pollution. The eastern Tennessee plant burns coal.*

Barbara Blum

growth for all manufacturing in the U.S., according to a study by Arthur D. Little, Inc.

EPA has launched a series of programs to encourage innovation and dollar-wise environmental cleanup. We believe industry's aim of economic efficiency is indeed compatible with the goal of a clean environment. Here are some EPA steps:

We're working closely—more so than ever before—with other agencies to coordinate efforts and to avoid duplication and overlapping programs.

We're consolidating pollution control permits required to build new plants.

We're devising new regulatory strategies, using market approaches to pollution control.

For example, to bring cities into compliance with national air quality standards, EPA's "offset" policy is the driving force.

It allows construction of new facilities, *but* there is a clincher. The firm could move in—if more existing pollution is cleaned up than the newcomer will introduce. So far, EPA has 650 documented cases of offset transactions.

To carry this a step further, EPA also permits, as a matter of policy, "banking" of extra reductions in air pollution—which later can be transferred to new firms in the area.

Then there is EPA's "bubble" policy.

Under this policy, a company draws up plans to clean up *its own* polluting processes, keeping in mind that the total pollution from any single facility must not exceed the sum of EPA's source-by-source requirements.

Late last year, an analysis by Du Pont showed that, by employing the bubble concept, the company could save $81 million a year.

In spite of EPA's best efforts, environmental requirements do impose costs that adversely affect some firms and communities. In these instances, we try to respond.

Our economic assistance program involves identifying both industries and individual firms that have difficulty complying with our requirements, informing them that loans, favorable tax treatments, and other forms of aid may be available through Federal agencies such as the Small Business Administration and the Economic Development Administration, and holding seminar series to offer them solutions to economic and technical problems. In some cases, EPA does special studies of individual threatened plants. These studies examine problems and suggest remedies that can relieve the situation.

These, then, are some of the regulatory approaches that EPA has developed to promote environmental protection and a healthy economic climate.

Of course, the cost of protecting public health and the environment has not been cheap.

It is an expense well worth it to the American public, recent surveys indicate.

A full page ad in the Washington Post recently underscores the point.

Paid for by the Union Carbide Company, the ad stated that the company had commissioned a public attitude survey on economic growth. Not surprisingly, the poll found strong public support for economic growth, even if it meant cuts in government programs that would hurt them personally. It was a paragraph in the middle of the text that caught my eye. Let me quote it verbatim:

*"An exception to this is government action to protect human health and the environment. The survey shows that Americans continue to assign a high priority to these goals and support government programs to achieve them."*

It is obvious that the public continues to believe that the Nation must have both a healthy economy and a healthy environment. As Deputy Administrator of EPA, I believe that they are right. Study after study on various sectors of the economy indicate that both of these national objectives are desirable—*and* possible.

A recent study done for EPA and the Council on Environmental Quality found that the GNP has been marginally higher because of pollution control expenditures. By 1986, America's unemployment rate will be about 0.2 percentage points *lower* because of environmental activities. Finally, the study showed that environmental regulation increases consumer prices by a small amount, so small that relaxation of the controls would hardly dent the annual rate of inflation.

What we are striving for is environmental protection—the kind that industry can live with, government can live with, and, most of all, the American people can live with.

Bob Cahn, in his book "Footprints on the Planet: A Search for An Environmental Ethic," underscored the point:

*"It makes no sense to preserve the environment at the cost of national economic collapse. Nor does it make sense to maintain stable industrial productivity at the cost of clean air, clean water, parks and wilderness."*

America doesn't have to have a spoiled environment. We don't have to have a weak economy. With ingenuity, cooperation, and a national dream, we can have the healthy economy and the clean environment that we want. □

# LANDMARKS

**"What is the most significant environmental achievement of the past decade?"**

EPA Journal asked this question of a broad spectrum of American leaders. The diverse responses reflect the different perspectives of the participants.
The answers follow:

*Skaters on the C and O Canal in Washington County, Maryland.*

## John R. Quarles, Jr.

Former EPA Deputy and Acting Administrator
Partner, Morgan, Lewis & Bockius
Author of "Cleaning Up America"

What a difference a decade makes. It is hard now to take our minds back to those first days of EPA when everything was popping loose and nothing clearly organized. It was, as Bill Ruckelshaus quipped, like running the 100-yard dash and having your appendix out at the same time.

Today EPA is solidly established as a major organization in the institutional structure of our country. EPA has vastly expanded statutory authorities, strengthened staff capabilities, a larger budget, and a regulatory impact that touches industrial practices and individual lifestyles throughout the Nation.

The record of achievement is impressive—and not just in terms of regulations jamming the *Federal Register,* or even in dollars spent on pollution control. The important point is that real progress has been made to control pollution. Trends of degradation have been reversed. The water and the air are getting cleaner. Much more is being learned, and done, to protect our health and the environment.

Yet the challenge before EPA is still enormous. Ten years ago we were unsure whether the public would support tough environmental programs. Today we know they will, but the awesome challenge is to design programs that are efficient, fair, and effective. The future success of both EPA and the national environmental effort depends on how well that challenge can be met.

Through it all, the great strength of EPA has been its people. EPA attracted an extraordinary pool of talent at all levels and across its many programs. Despite the inevitable turnover, the level of commitment and the level of capability have made EPA an extraordinary Federal agency. Like its many other alumni, I am deeply proud to have been a part of it.

## Robert W. Fri

Former EPA Deputy and Acting Administrator
President, Energy Transition Corporation

Any number of individual events could qualify as the most significant environmental achievement of the past decade. But I believe that an even more significant, and certainly a more lasting, accomplishment has been the shaping of the institutions that will continue to protect our environment in the years to come.

The Environmental Protection Agency is one such institution, but there are many other groups. Regional, State, and local agencies, citizens' groups, and industry all contribute. These institutions do not always agree on how best to do the job—nor, in our society, should they—but they share the common goal of environmental protection.

What is perhaps most important is that these institutions function throughout the country, where the action is. Even the Federal agency operates through strong regional offices, a source of considerable pride for those who advocated the regional system 10 years ago.

In short, the most significant environmental achievement of the decade is people committed to continuing progress.

**E. M. Estes**
President
General Motors Corporation

The most significant progress is that we have been able to eliminate, without any doubt, new gasoline automobiles as a major contributor to air pollution. At Federal statutory levels, 1981 model cars emit 96 percent fewer hydrocarbons than an uncontrolled car of the 1960's, 96 percent less carbon monoxide and 76 percent fewer oxides of nitrogen.

Achieving this reduction—while at the same time improving fuel economy—required the development of a number of new technologies. The most notable was the catalytic converter, which is one of the major developments in U.S. automotive history.

Introduced on 1975 models, the catalytic converter is now used by foreign manufacturers as well as domestic ones, and it has a proven record of dependable, effective, trouble-free service.

For 1981, General Motors is teaming a new, three-way catalyst with an on-board computer on our gasoline cars. Called Computer Command Control, this system is the latest advance in emissions control technology. It allows General Motors to achieve the lowest emissions ever and the highest average fuel economy in our history—a projected 23.1 mpg for 1981.

**Mrs. Lyndon B. Johnson**

It would be difficult to pick and choose the one most important achievement over the past ten years in improving the quality of life as a result of environmental protection legislation. I think of the strides that have been made in cleaning up many of the Nation's rivers, the improved "breathing capacity" of some of our large cities, and the increasing amount of land that has been set aside for parks and recreation areas.

But having had a front row seat when the environment became a part of my husband's agenda early in his term of office and a worker in that "vineyard" ever since, I have watched with a growing sense of excitement and hope a significant outgrowth of these efforts—the evidence that our national consciousness of environmental problems has greatly expanded and along with it our ability to affect preservation measures through the many avenues of participation open to citizens.

**Richard A. Snelling**
Governor of Vermont

Ten short years ago, as EPA was born, I attended another birth here in Vermont. It was an event of such consequence to the Vermont environment that this year we gathered together to celebrate its 10th anniversary, in the same spirit that America commemorates the first decade of EPA. It was the passage of Vermont's premier environmental law, Act 250.

These two still very young legal entities sprang from the same inspiration—a respect for the natural environment. We believed, quite prudently as it turns out, that the environment should have a voice in the decisions we made about our future. We believed that the environment had rights too.

Both EPA and Act 250 were suspected, from the moment of their births, of being spoilers. "They will turn back the clock," their critics claimed, "they will return our land to wilderness."

Ten years later, most of those critics are silent. Our experiments in environmentalism have proved to be quite rational exercises in human and natural relations.

Vermont is proud of its environmental record over those 10 years, and equally proud of the productive relationship it has enjoyed with EPA. EPA's programs, especially those which have been designed in partnership with State environmental officials, have provided Vermont with good support for its own commitment to sensible environmental planning.

The world has changed markedly since 1970. So much of what we believed 10 years ago has been abandoned, or forgotten, or proved wrong. To our credit, our faith in our environment remains strong today in no small part because of EPA.

The Vermont environment, and its boon companion, Act 250, wish EPA a very pleasant birthday, and many happy returns of the day.

**Charles McC. Mathias, Jr.**
U.S. Senator
(R-Md.)

The most significant environmental achievement over the past 10 years may also be the environment's most important challenge in the years to come.

The greatest achievement I have noticed over the past decade is the change in attitude of people toward how we treat the environment. On April 22, 1970, Americans for the first time celebrated Earth Day. On that historic day everyone was talking about protecting the quality of life. We made the protection of our natural and man-made environment a national priority.

Since then much of this talk has been translated into action by government and by citizens. The decade of the 1970's saw standards for clean water and clean air set for the first time. We had finally realized what the byproducts of an industrial society can do to the environment. The past 10 years have also seen the creation of groups and agencies, such as the Environmental Protection Agency, charged with safeguarding the Nation's environmental health. Citizens' groups like the Chesapeake Bay Foundation have come to play an increasingly important role in working with government. This effort was the result of a national resolve and the realization that a clean environment is in all of our interests.

Nowhere is this change in attitude more visible than on the Chesapeake Bay. On a recent tour of the Bay, I was

struck by the very positive interest in the Bay's problems and in finding solutions to those problems. Watermen, farmers, developers, government officials, and people in the recreation business, all *now* seem to know about the Bay, its problems, and the fact that their lifestyles affect the future of the Bay.

The greatest challenge then will be whether these attitudes will be able to prevail into the 1980's in the face of mounting economic pressures to relax environmental standards. Today, two urgent domestic problems —our need for energy independence and the necessity to control inflation—dominate the national consciousness and the national agenda. Will the environment be a casualty in the rush to meet these great challenges? The most significant change in the environment in the next ten years may be our minds. We must then work hard to maintain the positive attitudes developed since 1970 to insure what has been accomplished in the past decade is not undone in this decade.

**Jennings Randolph**
U.S. Senator
(D-W.Va.)
Chairman
Senate Environment and
Public Works Committee

The decade of the 1970's was one of great accomplishment in the environmental area. The passage of laws, the establishment of government agencies, the corporate decisions, the activities of citizen groups all were but components of what I consider the most significant achievement of the past 10 years: the emergence of an environmental consciousness and the adoption of an environmental ethic throughout our Nation.

The cumulative result of this activity has added a new dimension to our pursuit of the American dream. We know now that the quality of life is of equal importance with the material goods that have given us our high standard of living and national wealth. We realize that our air, water, and other natural resources are finite and must be protected to assure the kind of future we envision.

The acceptance of environmental values in the years immediately past constitutes a commitment to the future and is one of the strongest indicators of the maturing of the American society.

**Gladwin Hill**
Environmental Reporter
The New York Times

I think the most significant environmental development of the last decade has been the American public's recognition of environmental imperatives, and the impetus and sustained support the public has given to environmental enhancement.

Without that grass-roots sentiment, the National Environmental Policy Act could not have passed and become a legal keystone for environmental reform; Congress would not have felt the pressure for the basic environmental legislation; the Environmental Protection Agency might have been impotent; and the Council on Environmental Quality could not have achieved its stature as an influential national 'conscience.'

Opinion polls have consistently shown continuing public concern for environmental quality, and the public has never quibbled about the considerable costs, even though it is the public that ultimately pays all the bills.

This public sentiment has been massive enough to offset the fact that it has been to a great extent amorphous and unfocused. But the essence of the Environmental Revolution is citizen participation in public decision-making. Public support is not the same thing as public participation. Citizen participation has made a significant start. But it needs to develop rapidly to meet the challenges of the decade ahead.

**Jessie M. Rattley**
Councilwoman
Newport News, Va.
President
National League of Cities

Since the early 1970's, the National League of Cities has advocated a national policy of urban conservation to improve the quality of life in our Nation's cities. This policy recognizes that the future of America's urban areas depends in large part on how effectively they can compete as desirable places in which to live and work, and that much of their attractiveness is determined by the quality of their environment. For municipal officials, a major accomplishment of the past decade was the integration of environmental programs as a major building block in a national strategy of urban conservation.

For cities, the payoff from pollution control efforts has been remarkable. Our rivers and lakes, once smothered by community and industrial waste, are again becoming suitable for recreation. City waterfronts are experiencing a physical and economic renaissance, and many urban areas are beginning to reverse the longstanding deterioration of their air quality. These achievements did not come easily. They involved billions of scarce local tax dollars and, for local elected officials, choices which often were politically unpopular.

As we enter a new decade, city officials are committed to preserving and enhancing the environmental gains of the 1970's and to working in partnership with citizens, the private sector, and other levels of government to meet the new challenges posed by energy development, hazardous waste disposal, and the sweeping impact of accelerated technological change on the environment.

**Thomas L. Kimball**
Executive Vice President
National Wildlife Federation

When the National Environmental Policy Act (NEPA) was signed into law on January 1, 1970, it marked the decade as one in which a consideration for environmental quality became an integral part of living in the United States.

Actually, NEPA was a remarkable legislative response to an increasing concern expressed loudly by millions of Americans awakened to the dangers of environmental degradation. The idea behind NEPA was a simple, but far-reaching one: 'Look to the future.' By requiring Federal agencies to spell out a proposed project's environmental consequences, the Act signalled an end to the myth that all development amounts to progress.

Following NEPA, which also created the Council on Environmental Quality, came more than two dozen other environmental improvement and protection laws, from the Federal Water Pollution Act to the Resource Conservation and Recovery Act. The EPA was established. All these new laws emphasized the important change in the manner of doing business in the United States established by NEPA.

Perhaps we can begin this new decade by seeing the final approval of a bill that enhances NEPA's policies: an Alaska lands bill allowing for economic development as well as for conservation of priceless natural resources.

**Tom Bradley**
Mayor, Los Angeles

In the largest sense history must truly look back at the decade of the 1970's as that pivotal time when the leading nations on Earth—the most affluent, the most educated, and the most fortunate of people—chose to examine the true implications of their actions for future generations.

In the 1960's, we were living in a very different world. At that time, it was standard practice to schedule freeway and

wastewater treatment plants construction to match straight-line population growth projections, to build new model airliners simply because they could go faster, and to approve subdivisions if they included proper building setbacks and the significant number of curb cuts.

The enactment of the National Environmental Policy Act signaled the beginning of the new era, prescribing a simple process for a simplistic view of a newly recognized problem. The Clean Air Act Amendments of 1970 required us to measure the whole problem, the degree of air pollution everywhere, and then to discover how to solve the problem—and to keep it solved. The Federal Water Pollution Control Act of 1972 built upon and improved this approach. These were all imperfect first attempts in an area still imperfectly understood. But, if there was any doubt that the convictions of the Nation were firmly set for success, enactment of the Clean Air and Clean Water Acts of 1977 should have laid this to rest.

Americans have clearly made the decision to live, work, and play with a sense of propriety. If the systems we have legislated for this new value are still imperfect, perhaps ponderous, let us work to perfect them in the next decade. In the meantime, history will recognize these last ten years as the time when the first Nation in history chose to accept a degree of responsibility for its actions.

**James B. Hunt, Jr.**
Governor, North Carolina

It's just an old river. A very old river. And in North Carolina we're proud we saved it.

On May 17, 1980, the New River—the oldest river on the continent and the second oldest in the world—was dedicated as a scenic river under both State and Federal Acts. This meant that the gently meandering river's 26.5-mile corridor through North Carolina would be protected in its natural state—now and for the generations to come.

The dedication capped a 14-year struggle to keep the New River as it is and ended the threat that a power company's system of dams and reservoirs would destroy it, inundate 42,000 acres and displace 3,000 people. Citizens of North Carolina and concerned individuals from across the United States rallied to the defense of the river, gained State and Federal Government support, and won.

Saving the New River is an important environmental accomplishment in itself. Beyond that, it is a powerful example of effective citizen action. In North Carolina the lesson of the last 10 years is that valuable resources can be safeguarded when the people and their leaders persevere. The commitment and determination of our people is, perhaps, our greatest natural resource and the key to meeting the environmental challenges of the coming decade.

**Odessa Komer**
Vice President and Director, Conservation Department
International Union
United Auto Workers

I believe, in the years ahead, the environmental benefits accruing from Sun Day 1978 may even compare favorably with the incredible impact of Earth Day 1970 and all its success in creating awareness/impetus for enactment of legislation to curtail pollution. The United Auto Workers contributed initial funding and assisted Denis Hayes, et al, in organizing Sun Day, as we had the first Earth Day. We felt that by utilizing environmentally-cleaner solar power, rather than continuing total dependence on conventional pollution-causing energy sources, we could tremendously benefit the environment.

We first became enthused about solar power from the personal experience gained through constructing our own solar projects in 1974-1975 at the United Auto Workers Family Education Center on Black Lake at Onaway, Mich., but were also convinced that a big national push was needed to get the country moving to solar power. The week-long Jobs-Environment-Justice Conference held there in 1976 (to combat the slowing of environmental progress due to environmental blackmail) reinforced our conviction that solar power would also serve as the much-needed vehicle to bring trade unionists, consumer organizations, and urban groups together with environmentalists.

Many organizations and people got together for the first time on May 3, 1978, and successfully advocated the increased use of solar power. A lot of the folks are still working together today, too, but on various pro-environment programs and projects in addition to solar power.

Significant, environmental achievement in the last 10 years? SUN DAY!

**Henry W. Maier**
Mayor, Milwaukee

The dramatic decline in national energy consumption growth patterns has been the most significant environmental achievement in the last decade. There has been an actual decrease in our daily consumption of gasoline and a very sharp decrease in the annual growth rate of electric power consumption. This turnabout will have major second order effects in maintaining and improving environmental quality. Declining growth rates in the consumption of fossil fuels should prove beneficial to the urban as well as the national environment. The conservation trend will serve to improve our economy along with our environment.

In Milwaukee we have known for quite some time that energy conservation and environmental conservation are tightly bound to one another. The Mayor's Office has recently requested a volunteer group—the Science and Technology Utilization Council—to develop a long-term energy management plan for our public and private sectors. We see energy conservation as an economic and environmental investment. Milwaukee has already achieved some significant reduction in energy usage in both the public and private sectors. This project can and will bring about further improvements in conservation and in resulting environmental quality.

**Lloyd McBride**
President
United Steelworkers of America

The 1970's saw a national commitment brought into being by legislation to the protection of our environment and the protection of the health and safety of American workers.

The passage of such bills as the Clean Air Act, the Toxic Substances Control Act, and the Occupational Safety and Health Act gave us a total package to address the problems of the environment. It was recognized that there is a bond between the protection of workers in the plant and the protection of the community at large.

The enterprise and the community in which it is located are linked in a variety of economic ways. They are also linked environmentally. The economic good to the community of the enterprise should not be destroyed by any adverse impact it might have on the health of its workers and the health of the general population surrounding the plant. Economic welfare cannot be achieved at the price of health disintegration. Furthermore, health protection is a continuum. It would be of little value to see the worker in the plant protected from a toxic substance only to find that his family, his neighbors, and himself are exposed to the same substance outside the plant gate.

This binding of the workplace and the community under

# Environmental Support Still Strong

Although the state of the environment is no longer viewed as a crisis issue, strong support for environmental protection continues, according to a recent poll by Resources for the Future. The poll found no sign of a backlash which had been predicted once the costs of significant environmental protection became known. The overall impression given by the survey and by other polls at the end of the 1970's is that, far from being a fad, the enthusiasm for environmental improvement which arose in the early 1970's has become a continuing concern—a concern which shows every sign of remaining for the foreseeable future.

Asked about the seriousness of the pollution problem in this country, 7 in 10 respondents to the 1980 Resources for the Future survey answered that it is "somewhat" or "very serious"; only 8 percent felt that it is not a serious problem. One-half the respondents believed air pollution to be a serious problem in their own communities. Similarly, 39 percent were worried "a great deal" and 44 percent "a fair amount" about water pollution. Forty-six percent were very worried about toxic chemicals in the environment, and 64 percent of those answering expressed deep concern over the disposal of hazardous wastes.

A wide range of Federal agencies supported the survey by Resources for the Future (RFF). They included the Council on Environmental Quality, the Department of Agriculture, the Department of Energy and the EPA. The EPA supporting offices included Congressional Affairs, Public Awareness, and Toxic Substances. The polling was done by personal interview in January-February and March-April, 1980. The interviews were done for Resources for the Future by the Roper Organization and Cantril Research, Inc.

*Hagerman Peak and Snowmass Lake near Aspen, Colo.*

Resources for the Future also analyzed other environmental polls, and included the results and its own poll findings in a report entitled "Public Opinion on Environmental Issues," which was prepared for the sponsoring agencies.

Judged by answers in several of the polls analyzed by Resources for the Future, most of the population is willing to pay for the environmental protection. In 1980, for example, in answer to the University of Chicago's National Opinion Center's oft-repeated question whether the spending on domestic programs is too much, too little, or about right, 50 percent of the respondents said that spending on environmental problems was "too little"; only 15 percent answered that the amount was "too much." Despite the very large sums spent in the 1970's on environmental protection and despite public preoccupation with economic and energy concerns, a plurality of respondents to the 1980 Resources for the Future poll thought environmental protection was too important to consider the cost. Presented with three alternatives, 42 percent chose the one which read: "Protecting the environment is *so important* that requirements and standards cannot be too high, and continuing improvement must be made *regardless* of cost" (emphasis in the original).

Meanwhile, a September 1979 Roper poll asked whether environmental protection laws and regulations have gone "too far, or not far enough, or have struck about the right balance." Sixty-five percent of the respondents in the Roper survey said that the balance was right (36 percent) or that environmental protection has not gone far enough (29 percent). Only 24 percent said that environmental laws and regulations have gone too far. Roper's polls have shown that the percentages of those approving the balance or wanting more protection have remained the same from 1973 to 1979. The percentage of those who believed that the government has gone too far has gradually increased from 13 in 1973 to 24 in 1979, with the percentage of "don't know" declining proportionately.

Since 1970, the government has in fact devoted a great deal of attention to environmental problems, and it appears that the state of the environment is no longer viewed as a crisis, according to the Resources for the Future study. When the question was asked in the 1980 Resources for the Future survey, unemployment had risen to second place as an immediate government priority, and air and water pollution had dropped to sixth place. Cutting crime was first. But the answers to a broad range of probing questions show abiding public support for national efforts to protect environmental quality. Environmental issues seem to have become an enduring social concern, much like health care, education, and other basic issues, the study found.

In the Resources for the Future poll, 73 percent of those questioned said that the term "environmentalist" applies to them "definitely" or "somewhat." The percentage of people who regard themselves as "active participants" in the environmental movement has shrunk from 13 percent in 1978 to 7 percent in 1980. Yet the proportion expressing sympathy with the environmental movement remains the same, 62 percent. Only 4 percent are unsympathetic. Moreover, support for the environmental movement is not limited to the affluent, the well educated, or the young; it cuts across most demographic categories.

The poll results also showed the following:

- Blacks are much more concerned than whites about the purity of drinking water and noise pollution. Two out of three blacks are concerned "a great deal" about drinking water purity, compared with one in three whites.

- People who live in cities of 250,000 or more and in their suburbs are much more concerned about air pollution, toxic chemicals in the environment, and drinking water purity than those who live in rural areas.

- Older middle-aged people (55-64) are particularly concerned about the disposal of chemical wastes; the 18-34 age group is significantly more concerned about air pollution than its elders.

In various polls asking energy-environment tradeoff questions in the late 1970's, a plurality chose energy, the Resources for the Future study found. For example, in September 1979, an NBC News poll found that 47 percent of respondents considered "building a needed refinery or pipeline" more important than "protecting the environment"; 40 percent said that protecting the environment was more important. Yet in answer to questions about future energy sources, the environmentally benign energy choices such as solar energy and conservation came out on top in all the polls, including the Resources for the Future survey.

One of the consequences of the rise of environmental awareness has been a reconsideration of economic growth. Prior to the 1970's, growth was widely regarded as the driving force behind increased prosperity and an ever increasing standard of living. Growth is still regarded very favorably by most people, but there is far wider recognition that rapid growth may entail environmental costs.

The polls now indicate that, forced to make a choice, a strong majority of people will choose environmental quality over growth, according to the Resources for the Future study. A Harris survey for the Soil Conservation Service in October 1979 gave people the choice between a country which believes that economic growth is more important than protecting the environment and one where the environment is more important than growth. Two to one the sample preferred the environment (52 to 24 percent) and 21 percent was neutral.

At the close of the first environmental decade—when anxiety about taxes, regulation, energy supply, and the state of the economy is high—it seemed appropriate to take stock of the public's views on environmental issues, as measured by the polls. To make the Resources for the Future survey as realistic a test of public opinion as possible, the poll included a number of questions with difficult tradeoffs. Moreover, it began with questions that required respondents to compare the environment with a wide range of other concerns. Because of this unusual polling technique and because the poll was conducted at a time of exceptional concern about both economic and international issues (Afghanistan and Iran were much in the news), the RFF survey may be regarded as an especially strict test of support for environmental issues.□

(This article is adapted from the Resources for the Future report, "Public Opinion on Environmental Issues." Limited copies of the report are available by writing Joan M. Nicholson, Director, Office of Public Awareness (A-107), EPA, 401 M Street, S.W., Washington, D.C. 20460 or to the Council on Environmental Quality, 722 Jackson Place, N.W., Washington, D.C. 20006. Please send a self-addressed mailing label).

# Help for Problems

EPA was created on Dec. 2, 1970, by a Presidential Reorganization order to mount a coordinated attack on the environmental problems of air and water pollution, noise, pesticides, radiation, solid waste management, and toxics.
The Agency uses several methods to deal with pollution, including: standard setting, enforcement, monitoring, research and development, financial assistance, technical assistance, and provision of manpower and general education. EPA also shares domestic environmental responsibilities with State and local governments, and international environmental responsibilities with the governments of many Nations around the world.

EPA Headquarters in Washington has the jurisdiction to handle problems and questions on a national level, while local and State governments, working with EPA's Regional Offices, deal directly with environmental problems in communities. The chart on the following pages offers guidance on how to cope with some typical pollution problems. Changes in personnel shown in the chart will be reported by EPA Journal when President-elect Ronald Reagan announces appointees for his Administration. While this chart lists mainly government contacts, citizen organizations can often play a major role in correcting environmental ills. The dedicated work of conservation and other citizen groups has helped to score major gains in pollution control.

United States Environmental Protection Agency Organization Chart

Office of Inspector General
Inez Reid

Office of Administrative Judges
Herbert Perlman

Office of Civil Rights
Eduardo Terrones

Office of Environmental Review
William Hedeman, Jr.

Office of General Counsel
Michele Corash

Office of Intergovernmental Relations
Alan Magazine

Office of International Activities
F. Allen Harris

**Administrator**
**Douglas Costle**

**Deputy Administrator**
**Barbara Blum**

Office of Legislation
Susanne Wellford (Acting)

Office of Public Awareness
Joan Nicholson

Office of Press Services
Marlin Fitzwater

Office of Regional Liaison
Brenda Greene (Acting)

Office of Small and Disadvantaged Business
Bob Knox (Acting)

Executive Officer
Marylouise Uhlig

Science Advisory Board
Richard Dowd

Asst. Administrator for Air, Noise, and Radiation
David Hawkins

Asst. Administrator for Planning and Management
William Drayton, Jr.

Asst. Administrator for Enforcement
Jeffrey Miller (Acting)

Asst. Administrator for Research and Development
Stephen Gage

Asst. Administrator for Pesticides and Toxic Substances
Steven Jellinek

Asst. Administrator for Water and Waste Management
Eckardt C. Beck

Regional Administrators

| Region 1 | Region 2 | Region 3 | Region 4 | Region 5 | Region 6 | Region 7 | Region 8 |
|---|---|---|---|---|---|---|---|
| Boston | New York | Philadelphia | Atlanta | Chicago | Dallas | Kansas City | Denver |
| William R. Adams | Charles Warren | Jack J. Schramm | Rebecca Hanmer | John McGuire | Adlene Harrison | Kathleen O. Camin | Roger Williams |

| Region 9 | Region 10 |
|---|---|
| San Francisco | Seattle |
| Sheila Prindiville (Acting) | Donald DuBois |

| PROBLEM | THE LAW | EPA'S ROLE |
|---|---|---|
| You're experiencing a lot of respiratory irritation lately, and you've also noticed more and more smog building up in your area. | Clean Air Act | • establishes national air quality standards for important pollutants; sulfur oxides, particulates such as dust and smoke, carbon monoxide, ozone (smog), nitrogen oxides, and lead;<br>• sets limits on air pollutant emission levels from stationary sources and motor vehicles<br>• oversees the development of State air standard implementation plans<br>• conducts research, especially on the health and welfare effects of poor air quality |
| Constant noise from passing traffic disturbs your relaxation, thinking, and sleep, especially noise from large trucks. | Quiet Communities Act | • sets noise emission levels for new products that are major noise sources<br>• conducts research to further identify the impact of noise on human health and welfare<br>• requires labeling of selected new products with respect to their noise-generating or reducing characteristics<br>• submits advisory recommendations and proposes regulations to the Federal Aviation Administration to control aviation noise<br>• provides technical and financial assistance to State and local communities for the development and improvement of local noise control programs |
| The pesticide spray you're using on your rosebush seems to be hurting the flowers more than the bugs. | Federal Insecticide, Fungicide and Rodenticide Act | • regulates pesticides based on a balancing of risks against benefits<br>• registers all pesticides marketed in the U.S., after a premarket screening for potential adverse health effects<br>• classifies the most hazardous pesticides for restricted use and sets standards for certification of applicators to apply restricted products<br>• cancels or suspends the registration of products which pose unreasonable risks to humans, animals, or the environment |
| You've heard about recent foreign nuclear testing resulting in fallout around your area, and are worried it may have reached the grounds where your cattle graze. | Atomic Energy Act | • provides overall guidance to other Federal agencies on all radiation matters that could affect public health<br>• sets generally applicable environmental standards<br>EPA is also responsible under several other authorities (Ocean Dumping Act, Safe Drinking Water Act, Federal Water Pollution Control Act, Clean Air Act and the Uranium Mill Tailings Radiation Control Act) to develop a variety of radiation regulations to protect the public health and safety. |
| Neighborhood children have dug up an old container that you think might have been part of an industrial waste dumpsite. | Resource Conservation and Recovery Act | • sets standards for handling of solid and hazardous waste<br>• makes national inventory of open dumps of solid and hazardous waste, and sets standards for upgrading and controlling dumping facilities<br>• initiates development and demonstration projects in solid waste technology, such as recycling |
| You suspect your child's school was soundproofed with materials containing asbestos, linked to lung disease. When building materials deteriorate they can release asbestos. | Toxic Substances Control Act | • has assembled the Nation's most comprehensive inventory of existing chemical substances in U.S. commerce<br>• requires testing of potentially hazardous chemicals by their manufacturers and processors<br>• screens new chemical substances through a "premanufacture notification" program<br>• controls chemical substances found to pose an unreasonable risk to human health or the environment |
| You notice more and more dead fish floating downstream in a creek behind your house. | Clean Water Act | • provides guidance to industry on appropriate pollution control technologies<br>• assists in State and local water quality management planning<br>• issues discharge permits to municipal and industrial dischargers<br>• conducts extensive research on health effects and application of appropriate technological controls<br>• provides construction grants for public wastewater treatment plants<br>• coordinates cleanup of spilled oil and hazardous materials into inland waters when the responsible party is not taking proper cleanup actions. |
| Your drinking water has a noticeable taste and smell. | Safe Drinking Water Act | • sets minimum safe drinking water standards<br>• assumes primary enforcement authority if a State does not<br>• designates sole source aquifers<br>• controls discharge of pollutants into groundwaters |

| WHAT YOU CAN DO | CONTACT POINT |
|---|---|
| Look for major air pollution sources. Are heavy industries or power plants nearby properly controlled? Find out if they are meeting air pollution emission standards. In most cases EPA has transferred primary enforcement powers to the State government. Let local and State officials know you care about clean air. Perhaps vehicle pollution is a big contributor. You can support local auto inspection programs. Give your car an emissions test and encourage your friends to keep their vehicles tuned for clean air. Try a car pool to conserve gas, your nerves, and your lungs. Ride the bus or subway whenever possible. | • Local health department<br>• State environmental agency<br>• EPA Regional Office—Air program |
| Protect your peace of mind; trees, fences, home insulation, and heavy drapes are just a few of the ways you can muffle outside noises. Eliminate as many home noises as you can; buy quieter appliances, place them on surfaces that absorb sound, use rugs and curtains to dim the racket. Write for EPA booklets on noise control. Does your town have a noise ordinance? Is it being enforced? EPA's Quiet Communities Program helps local governments tailor noise ordinances to meet changing requirements. Call your EPA Regional Office for more information. See list on P 37. | • Local government<br>• State environmental agency<br>• EPA Regional Office—Noise program |
| Read the pesticide label first and follow the user instructions. Make sure you're using the right weapons against pests. Some problems respond to simple measures such as hand removal of insects or application of non-toxic mixtures like soap and water. Check with your county agricultural extension agent for advice. General rules for pesticide safety exist in many EPA pamphlets, write for them at the address in the last column on this page. | • County Agricultural Extension Service<br>• State environmental agency/agriculture department<br>• EPA Regional Office—Pesticide program |
| EPA maintains a nationwide network of monitoring stations that record radiation levels in the environment. This Environmental Radiation Ambient Monitoring System is often operated by State and local health agencies. Scientists check samples of air, water, human bone tissue, and milk *(in cooperation with the Food and Drug Administration.) Some Regional Offices publish reports on* radiation levels annually. You can obtain specific readings for a time period and area from the Radiation Program in the Regional Office. | • Local health department<br>• State environmental agency<br>• EPA Regional Office—Radiation program |
| People across the country are participating in "Waste Alert," an EPA project that involves a wide range of citizens in hazardous wastes management through regional conferences with government officials at all levels. If you suspect there is a hazardous waste dump in your area contact the EPA Regional Office to find out which State officials should be informed. They can also tell you how to get involved in Waste Alert and give you information materials about hazardous waste control. | • Local health department<br>• State environmental agency<br>• EPA Regional Office—Solid waste program |
| EPA has a program to help schools check for asbestos-containing materials and to correct any hazardous conditions that may exist. Recent Federal legislation established a multimillion-dollar grant and loan program to aid in rectifying this health hazard. There are asbestos coordinators and technical field advisors in the 10 EPA Regional Offices who train State officials to deal with the problem. They can loan you an asbestos information videotape and put you in touch with local officials who can help. | • Local health department<br>• State environmental agency<br>• EPA Regional Office—Toxic substances program |
| Check upstream for major sources of pollution such as a city or a company. In most cases EPA has given the primary enforcement authority for water discharge permits to the States, so call your local health department or State environmental agency first. Perhaps runoff from construction sites *or farmlands is causing the problem. Locate the agency responsible for water quality management* planning in your area and tell them about your concern. If an oil spill or spill of certain chemicals into navigable waters is causing the problem, report it by dialing 800-424-8802 if you are outside the Washington, D.C., metropolitan area or 426-2675 if you are inside it. The long distance number is toll free. If the company responsible for the spill does not clean it up, Federal authorities are authorized to do so, with the discharger liable for the cost. The EPA Regional Office can tell you who to call and can supply booklets and films on water quality. See list on P 37 | • State environmental agency<br>• EPA Regional Office—Water program |
| Call the water company first about your problem. It may be a temporary condition due to weather conditions or repairs to the water system. Let your local health department know, as well, since most States have primary enforcement responsibility for maintaining safe drinking water. You can write to EPA for pamphlets and films that explain the health standards protecting drinking water and the responsibilities of water suppliers. | • Water supplier<br>• Local health department<br>• State environmental agency<br>• EPA Regional Office—Water supply branch |

### Directory

For information about how the Agency is organized, and also the names, addresses and telephone numbers of key EPA officials, write for the "Topical Directory." Requests should be addressed to: Printing Management Office, EPA (PM-215), Washington, D.C., 20460.

### Publications

EPA produces and distributes a variety of non-technical publications on environmental topics to promote public awareness and understanding of the laws the Agency is responsible for carrying out. "The Guide to General Publications on the Environment" is available from the Publications Office, EPA (A-107), Washington, D.C., 20460.
EPA also maintains a mailing list for people who would like to receive these publications. If you wish to be added to this mailing list, please write to: Mailing List Manager, Office of Public Awareness (A-107), EPA, Washington, D.C., 20460, for an application form.

### Films

Two EPA films, *Serpent Fruits* and *Water Passages,* are available to the public on free loan from: Modern Talking Pictures, Distribution Office, 5000 Park Street North, St. Petersburg, Fla., 33709. Other films can be obtained from EPA Regional offices, or by contacting the Constituency Coordinator, EPA (A-107), Office of Public Awareness, Washington, D.C., 20460.

### Mailing address

U.S. EPA
401 M Street, S.W.
Washington, D.C. 20460

### Phone number

The phone number for EPA's Public Inquiries Center is 202-755-0707.

A list of EPA Regional Offices appears on P. 37

# Aiding Consumers

By Rhea Cohen

The EPA has set up a program to provide consumers with more access to agency decision-making procedures. In June EPA published its consumer program, which the Office of Public Awareness (OPA) will implement in compliance with Executive Order 12160, "Providing for Enhancement and Coordination of Federal Consumer Programs."

The consumer affairs program is under the direction of Joan M. Nicholson, the Administrator's Special Assistant for Consumer Affairs, and director of OPA. Oversight responsibilities rest with the Consumer Affairs Coordinating Council, composed of representatives of the major EPA offices. The groups meet quarterly to make recommendations on the Agency's public information and participation activities, and to issue an annual progress report.

With C. William Carter, Deputy Assistant Administrator for Resources Management, Nicholson co-chairs the council and will be responsible for assuring that consumers have access to regulation development and implementation. The OPA Associate Directors and Constituency Development Unit provide full-time support for consumer affairs activities. While EPA has had an active public participation focus for many years, its consumer affairs program is one more means of enhancing these particular activities: complaint handling; provision of education and training opportunities for consumers and staff; publication of information materials; support of public participation activities; and, oversight of the consumer program.

To shorten response time and to provide systematic information about complaints for Agency officals who set priorities and policy, a feasibility study is underway to explore new options for complaint handling. Although complaint handling is primarily the responsibility of the Public Inquiries Center, many other sections of EPA also act on complaints, including the ten regional offices around the country.

In the field of consumer education and training, EPA will consider more simplified procedures for financial assistance to nonprofit organizations, for preparing information materials about Agency programs, conducting workshops and conferences, and in other ways encouraging people to participate effectively in the decision-making process. Early next year such a proposal will be published in the *Federal Register* and comments will be solicited, before any new practices are adopted. EPA also offers workshops and professional consumer affairs training to its public information staff. Joan M. Nicholson conducted the first such workshop in Kansas City, Mo., last month.

With the assistance of regulatory program staffs, the Office of Public Awareness prepares annual plans to develop necessary written and audiovisual materials. Routinely included in the Agency's distribution network are the ten EPA regional Public Awareness Offices, the 27 EPA laboratories, and the ten EPA regional libraries, as well as individuals and organizations on mailing lists that cover more than 100 special subjects.

Before issuing a regulation, EPA takes a number of steps to encourage consumers' understanding and participation. For every significant regulation, EPA:

- draws up a plan for the public to participate in developing the regulation;
- gives early notice, including *Federal Register* publication, that rulemaking development is beginning;
- meets with numerous special interest groups (such as consumer, minority, trade, public health, labor, scientific, education) to discuss issues and alternatives;
- provides background information and holds open conferences, workshops, hearings, and/or meetings, and arranges direct mailings;
- allows at least 60 days for comment on published proposed actions;
- summarizes outside comments and responds to major points, then distributes information to interested and affected groups and individuals.

The Office of Public Awareness is preparing a consumers' guide to participation, both in rulemaking and in other Agency activities. Considerable advances have been made by EPA's Public Participation Task Force, which was created in April 1978, and is headed by Sharon Francis, the Administrator's Special Assistant for Public Participation. The Task Force recently proposed in the *Federal Register* a new public participation policy to satisfy these objectives: promote citizen involvement in implementing environmental laws; help people understand official programs and proposed actions; keep citizens informed about significant issues and changes in proposals; help government understand public concerns and be responsive to them; demonstrate that the Agency consults with interested or potentially affected segments of the public and considers their views when decisions are made; foster a spirit of mutual trust and openness between EPA and the public. The Policy includes a five-step plan to accomplish the following:

1. Identify groups or individuals who may be interested in or affected by a forthcoming action. This means the responsible official should develop a contact list for each program or project and add to the list whenever members of the public request it.
2. Disseminate pertinent and timely information on issues and pending decisions.
3. Develop dialogue between EPA officials and the interested and affected members of the public, possibly in the forms of briefings, workshops, newsletters and hearings.
4. Assimilate citizens' viewpoints into final Agency decisions. The Agency must publish a summary listing of the comments received and the conclusions of the Agency.
5. Inform participants and interested parties about the outcome of public involvement.

Comments on the proposed public participation policy are now being reviewed and a final policy should be published by early 1981. [ ]

*Cohen is a former consumer affairs co-ordinator for EPA's Office of Public Awareness.*

*Oily goo from an oil well in the Gulf of Mexico smears the hands of an official helping with the cleanup of a Texas beach.*

# A Look Back

Several catastrophes in the United States and abroad helped fuel the crusade against pollution during the Decade of the Environment. They included explosions of chemical wastes, the improper handling of dangerous pesticides, a massive oil well blowout in the Gulf of Mexico, the poisoning of people and animals by toxics, and the threat of radioactive contamination from a malfunctioning nuclear power plant. These and earlier disasters spurred the passage by Congress of laws to curb abuses. As a result, the 1970's became known as the Decade of the Environment, an era of progress celebrated at the 10th anniversary of Earth Day last April.

A

C

B

D

*(A). Child victims of dioxin exposure after a chemical explosion in Seveso, Italy.*

*(B). Guarded by a face mask, a workman uses his machine to dig the poisonous pesticide, Kepone, from the ground in Hopewell, Va.*

*(C). Fire hoses quench ruins left after hundreds of drums of waste chemicals exploded at storage site in Elizabeth, N.J.*

*(D). Michigan dairy farmers shooting cattle contaminated by the toxic chemical, PBB.*

*EPA scientists check equipment to monitor radiation at Three Mile Island nuclear power plant.*

*Runners in front of the Nation's Capitol in Washington help celebrate Earth Day last April.*

# The Global Connection

By Chris Perham

Food scarcity, dwindling natural resources, population growth, economic instability, and the environment were key concerns raised recently at a three-day conference called "Environment: The Global Connection" in Washington, D.C.

Representatives of 36 nations attended the meeting to review environmental issues and comment on the implications of two major studies, *The World Conservation Strategy* and *Global 2000*. The conference was sponsored by the World Wildlife Fund, the Department of State, the United Nations Environment Program, EPA, the Council on Environmental Quality, and the World Bank.

Diplomats, economists, scientists, environmentalists, and government representatives met to listen to experts such as Russell Train, Mostafa Tolba, Elliot Richardson and Lester Brown. They brought information about programs in their countries and compared notes about problems and solutions. The conference devoted a day to each of three major themes: Land Use, Water Systems, and Economic Development.

Russell Train, President of the World Wildlife Fund-U.S., chaired the sessions on Land Use and the Environment. He told the conferees that the World Conservation Strategy is a blueprint for global protection. Train argued that environment and development are not mutually exclusive. He said that future success of the international effort requires the marriage of these two forces. Train also commented that lack of power for enforcement is a key problem for international environmental bodies.

Thomas Pickering and Gus Speth shared a session on Global 2000. Speth is Chairman of the Council on Environmental Quality. Pickering is Assistant Secretary of State for the Bureau of Oceans and International Environmental and Scientific Affairs. They told the assembly that the interconnections of global ecosystems are underlined by the snowball effect of problems as they increase. Pickering noted that dislocations in the supply of food and fuel are related to the rise in world population and the movement of the world's poor from countries of "have-nots" to "haves." He emphasized the threat of a shrinking genetic reservoir of economically valuable plant and animal species that results from destruction of tropical forest habitat and suggested that unanticipated pressures can make "renewable" resources non-renewable.

Speth said the Global 2000 Report is a view of what could happen *not* what will happen. He emphasized that people can do something and that we have time to correct the problems if we move now. "No one nation can respond, we all must respond. The problems are amenable to cooperation," Speth said. He announced that the U.S. has 13 interagency groups as part of a special task force developing recommendations for the President on concerns ranging from toxic chemicals to the destruction of wetlands, renewable energy resources, and protection of farmland.

The President of the International Union for the Conservation of Nature and Natural Resources (IUCN), Dr. Mohammed El-Kassas, spoke to the conference about the implications of desertification. Dr. El-Kassas detailed the types and extent of deserts in world geography. He asserted that Global 2000 did not deal strongly enough with the problem of deserts that human actions create and that cannot be reclaimed without human help. "All fresh water available to us from all sources is less than .01 percent of global water," said El-Kassas. "It requires the development of ambitious programs to increase our share from .01 percent to .02 percent. This is a simpler project and less expensive than sending a man to the moon and bringing him back."

Many speakers mentioned tropical rainforest ecosystems and the problems of deforestation. Dr. Thomas Lovejoy, Vice President for Science of the World Wildlife Fund-U.S., gave depth to these discussions by his presentation on the wildlife and plants that inhabit tropical environments. Lovejoy showed slides of the enormous variety of flora and fauna that coexist in the tropics. He noted that half to three-quarters of the world's species occur in tropical forests, but their distribution is very different from temperate climes. For example, 10 to 20 different types of trees may be the norm on a 12-acre plot in Connecticut, but in the Amazon 5 hectares of forest (approx. 12 acres) can have up to 250 species of trees with few individuals of each type. Similarly, one South American township hosts 450 different birds in low numbers. This population distribution makes the ecosystem very vulnerable to change. Lovejoy told the conference that some forests are already close to disappearance, especially along Brazil's Atlantic Coast.

Some participants said they had difficulty finding appropriate information and locating the necessary "experts" when dealing with environmental issues. Dr. Whitman Bassow, Executive Director of the World Environment Center, gave them pointers on finding and using international environmental information.

Bill Long, Director, Office of Food and Natural Resources at the Department of State, chaired the sessions on Water Systems and the Environment. Long emphasized that all water systems are becoming increasingly vulnerable to human activities and that nations are developing new policies to protect the seas.

A result of international concern about the fate of the oceans has been the Law of the Sea Conference, which Elliot Richardson described as "not just a collection of pious resolutions." Richardson compared it to a bill in Congress. He said it is a legislative codification of the principles of international law for the conduct of commerce and navigation on the ocean. Richardson, who is the former Special Representative of the President to the Law of the Sea Conference, noted that the articles of the conference cover the impact of ships' pollution, environmental effects of deep-sea mining for manganese nodules, and the need for protection of marine mammals.

Dr. Mostafa Tolba, Executive Director of the United Nations Environment Program, spoke to the conference about UNEP's Regional Seas Program. Tolba called UNEP "the environmental conscience" of the world, with a responsibility to monitor and assess conditions, develop proposals for management of pollution, and promote education and awareness. He declared that the survival of mankind depends upon water, yet 80 percent of the people in rural lesser-developed countries have no access to clean, safe drinking water. Tolba asserted that in developing countries more people drink dirty water now than in 1975.

Tolba also reviewed the ocean activities of UNEP. He pointed out that the environment suffers most where people and industries cluster; estuaries often succumb first. The effects of chronic pollution of ports may be a bigger problem than oil spills in the long run, according to the UNEP executive.

Dr. Sylvia Earle, Research Associate at the California Academy of Sciences, San Francisco, enlightened the conferees about the complexity of the marine environment. She showed slides of underwater biota and discussed the effects of use and abuse of ocean ecosystems.

The question of marine fish as a renewable resource was addressed by Dr. Lee Talbot, Director-General of the IUCN. Talbot declared that the world fish catch peaked in 1970 and has gone downhill since then despite the rising number of nations fishing and their advancing technology. He noted that the rich coastal areas where fish congregate and breed are an impact point for pollution and are accessible easily by boat, thus allowing for overfishing. Talbot said the idea that fish are an unlimited resource is a myth; commercial fishermen are going farther down the food chain than ever before. He pointed out that as much as 7 million metric tons of fish are discarded annually because they get caught in the wrong nets (i.e. porpoises caught by tuna fishermen). Talbot also noted that much of the fish harvest goes for fertilizer and animal feed, not for human food.

Making people aware of the shore as an area that merits attention was the goal of the Coast Alliance, a coalition of American conservation groups. Rafe Pomerance, President of Friends of the Earth, told the conference about the strategies the group used to gain media coverage and focus government action to protect the coast. He cited as evidence of success an improved coastal zone management bill, several new coastal wildlife refuges, and a Federal commitment to review coast-related projects.

Also speaking on the subject of water systems was Dr. George Woodwell, Director of the Ecosystems Center at the Marine Biological Laboratory, Woods Hole, Mass. Woodwell declared that the problem of toxic substances in the oceans is not being addressed effectively by scientists or politicians. He cited the existence of isotopes and PCB's in the deepest parts of the oceans and warned that people now are capable of changing the chemistry of the seas in fundamental ways. Woodwell reminded the conference that anything released into the atmosphere can be transported and washed into the oceans. Ocean biota are sensitive to substances in infinitesimal quantities, Woodwell continued.

The importance of freshwater ecosystems in the world environment was the concern of Dr. Ruth Patrick, Senior Curator of Limnology, Academy of Natural Sciences, Philadelphia. Patrick pointed out that conservation, planning, and reuse are crucial to our freshwater systems because demand will increase 200-300 percent by the year 2000. She emphasized the need for new irrigation methods, because 70 percent of the future water demand will come from agriculture. Patrick called for increased reuse of household water and for further investigation of recycling waste molecules that now pollute industrial water. She noted that researchers have isolated new organisms that thrive on substances like mercury and cyanide, which could be used for waste control. Dr. Patrick underlined the importance of communication and environmental education in the battle against pollution.

The final day of the conference focused on Economic Development and the Environment. Dr. James A. Lee, Director of the Office of Environmental Affairs for the World Bank, told the assembly that the international economic situation is difficult. He noted however, that the capital investments that will solve the problems outlined in Global 2000 (fuel shortages, deforestation, water pollution) must be made in the next five years, so there is not much time left to decide how to go. Lee said that the main thrusts of the World Bank program are people, public health, and social well-being.

Marshall Green of the Population Crisis Committee addressed the question of population growth and its effects on the environment and human well-being. Green stated that population control will take more than demographers and doctors—it will require the work of diplomacy, especially as masses of poor people cluster in cities. He called the millions of residents of urban slums "the dry tinder" of revolution. Green declared, "Poverty is not the possession of little, it's the non-possession of much." He blamed desperate efforts to increase food and fuel production as sources for pollution-erosion, foul water, poor air, decimated forests. He pointed to social development and family planning as crucial. Green concluded, "Human rights are important but human responsibilities are uppermost. You have to start thinking about the other guy."

Looking at the effect of industrial development on the environment of third world countries, Edmundo Ossio showed slides of both benevolent and destructive technology. Ossio is the director of a private, non-profit environmental organization in Lima, Peru. He pointed out that the effects of industrial development on the environment depend on the amount and type of development and the individual situation. Ossio said, "The industrial development process often assumes that Nature can be mined endlessly without impairment and can absorb wastes without impact.

Lester Brown, President of Worldwatch Institute, outlined an alternative future as he addressed the question of developing a sustainable society. Brown accused modern culture of consuming biological capital along with interest as soils wash away, biological systems deteriorate, and oil wells run dry. He claimed wood has become a primary and secondary heat source for almost 8 million U.S. homes and is burning in the boilers of 5 to 7 percent of U.S. industry. Last year's Buick is being recycled into two of this year's Toyotas, Brown continued. He noted that the Chinese have advanced technology for generating methane from animal waste and West Germany is using urban wastes as a fuel source. Brown foresees a new wave of plant domestication to tap biota for hydrocarbons to replace oil. He said that solar, hydro, and wind power are more competitive as technology improves and costs drop. This generation has the opportunity," he concluded, "to participate in the establishment of a sustainable culture."

John Sewell discussed the environmental implications of the Brandt Commission Report, which examined the relationship of the developed nations to the Third World countries. Sewell, who is president of the Overseas Development Council, said we must take lesser-developed countries seriously; their participation in the world economy is increasing. He pointed out that 50 of the Fortune 500 multinational corporations now are headquartered in Third World countries. He said the Report noted the need for restructuring the world economic system, eliminating absolute poverty, and taking short-term actions to transfer resources, revamp institutions, and deal with food/energy crises. Sewell felt, however, that such initiatives could only come from the private sector, not from government.

The role of non-governmental organizations in environmental protection was examined by Tom Stoel of the Natural Resources Defense Council. He told the delegates that these organizations perform a wide range of activities that impact heavily on value changes. Stoel noted that non-governmental organizations are found in most nations and that some, especially in Sweden and the Netherlands, are much stronger than their U.S. counterparts.

Joan Nicholson, Director of the Office of Public Awareness at EPA, summed up the conference for the delegates. She reminded them that the cultural histories of many nations, including taboos and customs, reflect recognition of the carrying capacity of the land. Nicholson concluded, "The reality of living, breathing, eating, and drinking are all affected by environmental matters. This is the global connection. It is true no matter where you live." □

# The National Environmental Policy Act

## An Interview with William Hedeman, Jr.

*William Hedeman is Director of EPA's Office of Environmental Review.*

**Q The National Environmental Policy Act has been in effect for ten years. How does it look to you in retrospect?**

A Very strong. It's significant that with one minor exception NEPA has enjoyed ten years without any amendments by Congress to its requirements. The statute is still respected and still capable of offering much opportunity to protect the environment in the future.

**Q NEPA has been described by the President's Council on Environmental Quality, among others, as perhaps the most influential of our environmental laws. Do you agree?**

A I think its enactment served as the cornerstone of the environmental programs which were built by the Federal Government, the States, and local governments in the decade of the 1970's. NEPA has a number of basic purposes: a desire in its goals to maintain conditions in which man and nature can co-exist in productive harmony; a desire for early public involvement in government decision-making; and a desire for complete disclosure of the environmental consequences of any proposed action before a decision is made that will affect our environment. We also see in the statute a recognition that we should consider as many practicable and appropriate alternatives as may be possible before we make a decision, and that we must try to mitigate the impacts on the environment of whatever decision we make. All of those basic concepts were embodied in the subsequent environmental statutes that were passed by the Congress.

**Q Can you give us some specific examples where this Act has made a significant contribution to preserving environmental quality?**

A Yes. Here are some cases:

First, in Montgomery County, Maryland, the county government proposed a 20-million-gallon-a-day wastewater treatment facility estimated to cost from between $60-$80 million. It was predicted that the facility would encourage rapid growth with significant environmental impact.

In contrast, an EPA recommendation developed through the environmental impact study process under NEPA would cost about $25 million. County officials still seem determined to build the larger plant and although no final decision has been made, they are considering building the facility with their own funds.

Regardless of the final outcome, it can be said that the environmental impact study undertaken on the Montgomery County facilities planning has assured that EPA funds will not be used to promote intensive development with its related environmental impacts. In addition to preventing urban sprawl, EPA's proposed alternative could save the taxpayer millions of dollars compared to what the originally planned facility would have cost.

Second, in July 1977, EPA selected seven Midwestern lake cleanup projects for analysis by environmental impact statements. Sewage treatment systems were proposed for the lakes. All projects involved substantial evironmental consequences and all had a high treatment cost per dwelling to be served.

The study staff considered a wide variety of alternative treatment techniques in developing alternative designs that would protect the lakes while also considering the communities' economic well-being.

The results of the impact study were impressive: the staff found that total costs could be reduced 30-50 percent. Local costs could be cut 60-80 percent. The total potential savings identified so far on the seven projects are $30 million.

EPA is now preparing a generalized impact statement to deal with similar situations. The approaches and solutions developed in the seven-project study will then be used in hundreds of other cases. That could easily save taxpayers—Federal and local—millions of dollars.

Third, Yarmouth, Mass., like many of its neighboring towns on Cape Cod, does not have any sewerage facilities; its wastewater flows to the groundwater through septic systems. Since the groundwater is also the source of its drinking water, Yarmouth is very much aware of the necessity for protecting its underground water resources. A consultant was retained by the town in 1974 to develop a facilities plan to study its wastewater situation. The resulting plan recommended sewers and centralized treatment for the southern part of Yarmouth and construction of a separate facility for disposal of wastes pumped from septic tanks for the rest of the area.

In its review of the facilities plan for construction grant funding, EPA decided an Environmental Impact Statement was warranted because of the potential for groundwater degradation, local controversy over system costs, and questions regarding the extent of sewering that was necessary.

The Environmental Impact Statement has outlined an alternative approach which will produce substantial cost savings. In addition, the impact study will result in mitigation of several environmental problems associated with the previously proposed projects.

**Q How has NEPA contributed to environmental protection in Federal programs in general?**

A The Act has made a contribution from a national perspective in three different kinds of Federal programs: programs in which the Federal Government is directly involved, such as in the direct construction of projects; programs in which the Federal Government is funding

projects through grants-in-aid; and in the regulatory area where the Federal Government must issue permits for projects.

The Federal construction agencies, such as the Corps of Engineers and the Department of the Interior, can cite you hundreds of examples of projects that have either been modified or abandoned because the NEPA analysis revealed that the project as originally proposed or authorized by Congress simply was not a wise course of action.

EPA's efforts in the construction grant program have led to a number of changes in proposed projects as a result of preparing Environmental Impact Statements under NEPA. Over 70 percent of these changes provided improvements in water quality from that proposed by the original project. Nearly 50 percent of these curbed excessive community growth and a significant percentage of the Environmental Impact Statements brought about a reduction of the direct adverse impacts of the project on sensitive areas including archeological and historic sites, wetlands, flood plains, and prime agricultural lands.

Finally, with respect to permit programs, very early in NEPA's history we found the courts telling Federal agencies that, in their review of permit applications, there is an opportunity through NEPA to consider and, indeed, modify or deny permits when the environmental considerations raised in the NEPA analysis reflect that there are better alternatives available to pursue a proposed course of action.

**Q Part of the Act recognizes the need to protect the land from unwise exploitation, yet land use legislation seems to get not very far on Capitol Hill. Why do you think that is so?**

A There was some land use legislation enacted by the Congress in the early 1970's, notably the Coastal Zone Management Act of 1972. I believe that the enactment of that Act was successful because of the recognition of the sensitive ecosystem that exists on the coastal zone, and the need to examine proposed projects in that zone from an areawide planning perspective. So we find Congress enacting legislation that allows an areawide land use type of review to occur in coastal areas to determine a project's compatibility with State and local land use plans. The NEPA process allows us to integrate those areawide concerns into environmental impact analysis.

Land use planning has traditionally been a matter of direct State and local concern and responsibility, just as much as the allocation of water resources. From a political standpoint, there is an extreme sensitivity on the part of the Congress to injecting the Federal Government into these areas of traditional State and local control. However, the Federal Government already is involved in this, directly or indirectly, through its various regulatory, construction, and grant programs that affect the use of land. And decisions are being made by the Federal Government in the use of land all over this country without being able to apply the broader land use planning programs that, thus far, the Congress has been unwilling to encourage in areas other than the coastal zone.

**Q Are there any other countries with the equivalent of these impact statements, or is the U.S. unique in requiring them?**

A There are a number of countries, industrialized or in the process of developing, that have procedures to assess environmental impact. Many of them met at the invitation of the Economic Commission of Europe last year to compare their approaches. Some have stronger programs than others. For example, many of them have assessment procedures that are required only by an Executive Order established by the country's present governing authority, rather than by statute.

We also are receiving a great deal of inquiry and interest on the part of developing countries to gain the benefit of EPA expertise as they move to develop their own environmental assessment procedures. I have met with environmental officials from Kenya, Malaysia, and most recently, the People's Republic of China, all of whom are extremely interested in information technology exchanges with the United States to implement similar programs for environmental assessment.

**Q Are there any areas where NEPA might be changed or improved further in the future?**

A I feel that much of NEPA's problem in the past has been the manner in which it has been interpreted by the courts. In a large part, that has been caused by the litigants who have sought that interpretation, their motives, and the way in which they have framed the issues before the courts. Unfortunately, most of this litigation has focused on procedural compliance with the requirements of NEPA rather than getting to the basic substantive mandates of the Congress as reflected in NEPA's goals and policies.

I don't necessarily feel that a change to focus on the substance of NEPA need be brought about through legislation. Instead, I think this can occur through a commitment by the Federal agencies charged with implementing it through the opportunities provided in the changes brought about by the new Council on Environmental Quality regulations.

So, my answer is, yes, I think there are areas where NEPA can be changed. But the opportunity to bring about that change and improvement exists through the processes that are afforded in the new CEQ regulations rather than a change in the statute itself.

**Q Should there be statements to measure other kinds of impacts—on health or the economy, for example?**

A Impacts such as these are being considered increasingly in the environmental impact process itself. Social/economic impacts, for example, are very much a concern in projects under consideration such as the MX missile and the construction of the trans-Alaska gas pipeline.

**Q Some critics have argued that the environmental impact review process might be compromised to death so that it no longer seriously considered environmental effects. Do you believe that this is a possibility or that it is happening?**

A No. I think the tide has turned. Initially, the process was being compromised. If you analyze the ten-year history of NEPA you see several stages—an initial stage in which Federal agencies resisted its application by arguing that it was not applicable to most of their activities. As a result of litigation, that stage ultimately evolved into a second stage in which agencies admitted that it was applicable, but prepared environmental impact statements that were written more toward responding to anticipated court litigation. The emphasis was on justifying the project rather than writing a statement for planning that could be used to assist in making a decision.

We're now in a stage in which the full reasons for the enactment of NEPA and the benefits that it can offer are now being recognized by all Federal agencies. It's a stage in which there is a focus on making the process analytical rather than defensive and encyclopedic. And it's recognized as a very valuable tool in the entire planning process. □

*This interview was conducted by Charles Pierce, Editor, EPA Journal and John Heritage, Managing Editor.*

# Making the Rules

Elvis J. Stahr, Jr.

It has become virtually a matter of conventional wisdom that the United States economy is overregulated. This is rarely disputed nowadays, and I should like to make it clear at the outset that I, as an environmentalist, share this nearly universal opinion.

At the same time, it is my opinion that a great deal of the current rhetoric about *environmental* overregulation is overblown and therefore inhibits rather than helps bring about sensible regulatory reform. What has happened, I think, is that the many environmental constituencies insisting upon tight or tighter regulation of this, that or the other aspect of doing business, have collectively, even though separately, pressed their several cases over many years to the point eventually of provoking severe backlash.

What really is the fussing about? Surely, the most serious fussing is not about whether, but about how much—about where to draw the line and how to achieve the right "balance." And just as surely, this involves trade-offs and thus boils down eventually to value judgments. But whose values?

It is my profound conviction that what is good for the environment is good for people! Moreover, and more to the point, I believe that what is good for the environment is also good for the economy—certainly in the long run, and probably in the short run. In fact, economic health and environmental health are fundamentally and increasingly dependent upon each other.

Environmental protection (i.e., a healthy life support system and the conservation of natural resources) is quite clearly in the interest of everyone, long range. But there is frequent controversy about whether it is being overdone in the short range. Some of the people who think it overdone have overreacted in curious ways.

A recent example was provided by the conflict between a small fish, the snail darter, and a big government construction project, TVA's Tellico Dam. Many of the same businessmen who (almost) constantly inveigh against "wasteful government spending" supported the spending of many millions of dollars to complete the dam even after that was clearly demonstrated to be *economically* unjustified and destructive of thousands of acres of productive farm lands to no very useful purpose! Those in the Congress who were gleeful about winning the fight to squander more government (i.e., taxpayers') millions on perpetuating that particular environmental mistake are at this moment supporting another couple of dozen socialistic, pork-barrel projects which are ecologically destructive *and* economically wasteful!

## Excessive Regulation

Nonetheless, despite the abuses entailed in so many government construction projects, I recognize—and strongly argue—that regulators, and proponents of regulation take very, very seriously the argument of the regulated: not only can there be too much regulation, but today, too often, there *is* too much. "Just remember," a wise man once said, "you can overdo anything." I have not yet discovered an exception to that.

But you can underdo, too. And there is persuasive evidence that resource protection was grossly underdone during the first centuries of development on this continent. The enormous environmental failures, for instance, to require reforestation in the wake of timbering and reclamation in the wake of mining, and the failure to restrict grazing on the public lands in the West to the level of the lands' ability to renew the grass continuously, have proven far more costly, in purely economic terms, than any conceivable set of sensible regulations would have been.

## Exploiting Complex, Cumbrous Regulations

To a conservationist, a wasteful system of conserving resources is ironic indeed. Moreover, the point has been largely overlooked that complexities and redundancies are often harder on environmentalists trying to support the underlying regulatory purpose than on the regulated enterprise itself. That is because the enterprises are likely to have more resources to bring to bear: more staff, more money, more experts on technical questions, more ways to cover simultaneous hearings at widely separated places, more people to analyze bulky environmental impact statements, and so on. Thus, there is good reason that the environmental community should support reforms which would streamline the regulations and regulatory processes which affect their central concerns.

## Too Many Regulatory Agencies

It is also frequently charged that there are too many regulators. I agree: there is staggering evidence that there are! I know of a recent instance in the West in which 14 permits were required to construct a non-controversial eight-inch feeder pipeline only 16 miles long. Each permit had to be sought from a different agency, at a different time and place. Why? Because the route traversed lands of two States, one Indian reservation, three local jurisdictions, and two Federal agencies (in addition to several private properties).

The remedy? Alfred Kahn last January at a White House meeting of high level Federal officials with some 200 State and local administrators, legislators, regulators and attorneys-general outlined what must be done to develop "one-step" procedures. He noted that by giving one agency authority over all environmental rules, the State of Georgia had managed to act upon all requests for permits to build major industrial facilities within 90 to 100 days. In other States, that has been known to take two to three years. (Kahn, deeply concerned about inflation, of course decried the "infinitude of local regulations of housing and occupational licensing.")

Once again, let me stress that environmental regulation is not the only or the main contribution to productivity problems, even in the short run. In the mid term and beyond, virtually everything done within our society that wastes or abuses our nat-

*A vista in Bryce Canyon National Park, Utah. Regulations have been proposed to protect visibility in pristine areas.*

ural resources ordains *declines* in productivity.

## "Productivity" vs. "Environmental Protection"?

Actually, the apparent conflict between "productivity" and "environmental protection" arises, I think, from two related mistakes in viewing the matter.

First, productivity is usually defined too narrowly by applying it only to the direct (internalized) costs per unit of the output of products which a particular enterprise produces for sale and profit.

Second, environmental protection is usually assigned no *economic* value, even though its economic value is frequently, perhaps even usually, very great!

For example, as long as Kepone, say, or PCB's (or whatever) could be manufactured and sold for profit (either by ignoring environmental costs or by forcing others to bear them), these activities were said to be "productive." But it finally became abundantly clear that passing the costs of disposal of toxic wastes on to society at large by dumping them into public waters (e.g., Kepone into the James River, PCB's into the Hudson) did not mean that those costs were *not* real. Grossly compounding the error, direct losses of productivity did result—to *others*: fishing industries, municipal waterworks, recreation industries, wildlife.

Some may deem that we need a particular factory's product more than we need cleaner air in the vicinity (or better crops far away where the acid rain falls). Others may deem otherwise.

But before plunging into confrontation, isn't it legitimate to ask, "Can we not have *both*?" In most cases we *can*, and my thesis is that when we can, we *should*. I urge," Let's produce, but let's produce in the better rather than the worse way."

## Environmental Protection *Creates* Jobs

In campaigning against measures needed to protect the environment, some charge that environmental protection produces unemployment. Well, it simply is not so. A nationwide survey in 1976 revealed that the number of closings of polluting plants for any reason since enactment of the first Federal Clean Air and Clean Water Acts was very small and that the number of those whose closings were in fact due to either the cost, or the impossibility of compliance with environmental regulations, rather than to other factors such as obsolescence and inefficiency, was downright negligible.

In fact, the Environmental Industry Council, the new trade association of manufacturers of pollution control equipment, reported in February 1980 that two million jobs had been *created* in that industry. That does not include the many jobs in the construction industry involved in the building of sewage treatment plants and the like. Nor does it include the jobs involved in reclaiming strip-mined lands, in reforesting cut-over lands, etc.

No doubt there will be job displacement, from time to time, in one place or another, as a result of needs to replace outmoded capital facilities. But rarely will a plant closing be attributable primarily to environ-

mental regulations—except, perhaps, in the case of closing of nuclear power plants.

### Business Conflict of Interest

The fact is that there is a built-in conflict of interest, one that is inescapable and strong in this situation. The *primary* goal of the company and its management is *profit*, and that is as it should be. It is not at all a bad thing. Profit drives the whole economy and produces much good (as well as goods) for the whole society. But, the *primary* concern being profit, anything that appears to conflict with it at a given moment is likely to get secondary, even short, shrift, if there are no outside constraints whatever. The economic history of the Nation bears that out fully, and it probably comes as no surprise to anyone today. It is simply asking too much of anyone or any company to carry the whole burden of that conflict alone. Even if there are *some* executives who could and would do so with the same degree of commitment to the public's interest in environmental values as to the company's interest in the bottom line. I am positive (and so, by the way, is every industrialist I know) that by no means do *all* executives have such a deep and abiding concern for the environment! And not to regulate the unconverted would be to give them competitive advantages which could destroy the converted, *self*-regulating company.

### Mere Aesthetics?

We've heard quite a few heads of regulated industries pooh-pooh the value of an attractive environment. Some speak of aesthetics, for instance, as if that were an "emotional" concern of "impractical" do-gooders, something to be scorned by hard-headed businessmen. Curiously, however, I've noticed that that very same hard-headed businessman will spend a great deal of his own money to acquire a house in beautiful surroundings for his own family and spend quite a lot also just to get an aesthetically pleasing environment for his vocation. These simple acknowledgments of the *economics* of environmental values speak, at least to me, louder than does the pooh-poohing.

Because greed is, alas, still a frailty of some human beings, there are times when the body politic *must* regulate. Otherwise, it would be necessary for it to forfeit any claim to wise stewardship of resources which are important to everyone now and which will become increasingly important to everyone's posterity.

My underlying thesis, then, is that economic health and environmental health are *both* necessary and, far from being mutually exclusive, or in some kind of conflicting relationship, must be at bottom interdependent and mutually supportive. To cast economic strength and environmental care in opposing roles polarizes discussions which ought to be focused on the fact that both are needed. Champions of each should be working *together* to achieve a wise and productive balance.

That a well-tended environment is supportive of a healthy and sustainable economy, I have argued in several ways thus far. Now to turn it around: how can it be said that a healthy economy is supportive of a well-tended environment?

### Environmental Desolation in Have-Not Nations

Lacking space to exhaust the subject, I must rely upon illustration. Probably the most rapidly deteriorating natural ecosystem (environment) on Earth is the tropical rainforest. It is being massively destroyed, hour after hour, year after year—by poor people! The economy of virtually every nation with significant acreages of tropical forest is in wretched shape. Their escalating human populations are cutting the forests at an almost incredible rate for firewood and to create what they hope will be arable land. These forests are literally irreplaceable; instead of renewing after their destruction, they turn into deserts. Nature assigned them *vital* roles to play, now and over the long future, as producers of oxygen for Earth's atmosphere, as habitat for the most diversified species of wildlife on Earth, as retarders of erosion, as storers of fresh water.

Stronger economies would make it much more practicable for governments to protect these forests. We often call them jungles, and some of the ignorant among us resent their being left in a state of non-"development." The scientific community, however, is virtually unanimous in worrying deeply about their destruction, for the consequences could be felt globally and could be cataclysmic. Unfortunately, not much can be done today except by the governments of the political jurisdictions in which these forests happen to be located. And, even more unfortunately, almost all of those are in economically underdeveloped countries which lack means to do much of anything.

There may be even more at stake, by the way, than a sustainable economy and a healthful and attractive environment. Despite some anti-environmental extremists' ridicule of environmentalism as the "doomsday lobby," it may not be totally un-American to worry occasionally about simple survival. Or so it seems to me, when I reflect upon the fact that oil is organic, not inorganic, matter, and the oil in the Middle East lies beneath a desert. That oil wouldn't, couldn't possibly be there unless that desert had once been fabulously rich in vegetation and animal life. Oil is a fossil fuel, after all, and sand is not the stuff of fossils! Yet sand is about all that is left on the surface, where *people* have to live.

### Voluntary Pollution Control?

Is it realistic, is it rational, is it even *fair* to expect many (or any) operators of smokestacks to *volunteer* to cut off the guilty emissions? Consider the cost of doing so. Consider the disadvantage if the competitor doesn't volunteer. Who would volunteer? No one has as yet.

Regulation is the only practical solution —in this instance—or so it seems to me, granting that research should be stepped up rapidly so that regulation can be as sound as feasible.

The United Nations Environment Program (UNEP), founded as one result of the great United Nations Conference on the Human Environment held in Stockholm in 1972, to which I was a delegate, has identified a sobering number of comparably grim and awesome threats to the biosphere. I shan't recite them here; not only is there insufficient space, but it is not my purpose to risk the paralyzing of action by making it appear hopeless.

I do want to emphasize, however, that many of the worst problems are rooted in the so-called developing nations and stem from runaway population growth and ignorance. Both of these are the almost inevitable products of weak economies. Yes, environmental health is dependent on economic health!

Environmental regulations which burden the economy (and some do, at least in the short term) should therefore never be purely obstructive, except in extreme cases such as prohibiting the pouring of poisonous effluent into drinking water.

Every regulation should be based on the simple principle that there are better or worse ways of doing just about anything. Regulation should clearly lead to the better, or not be used. Further, there must be a recognition that just about anything, including regulation, can be *over*done!

In fact, *over*regulation can destroy the very balance that might have made *sound* regulation the better way! □

*This article is excerpted from a piece by Dr. Stahr in The Journal/The Institute for Socio-economic Studies. Dr. Stahr is Past President and senior counsellor to the President, the National Audubon Society.*

There has been a heightening of global awareness. Attitudes have changed since the 1972 Stockholm Conference, where environmental protection was a preoccupation of the industrial nations that were trying to fight their way through polluted air to get to work or had lost the ability to use water for recreation. Now even developing nations are realizing there are serious environmental problems associated with development, and there's just a growing sensitivity, and I think, as time goes on, a growing impatience with the pace of international institutions in trying to solve real problems in time.

In the last ten years an international network of scientists has grown up who are worrying about and wrestling with environmental problems, and they talk to one another, and it cuts across traditional political boundaries between East and West. I think that's a very healthy sign. We now have bilateral agreements with China, as well as the Soviet Union, Poland, and, of course, with many of the Western nations. We're in the process of establishing agreements now with a range of developing nations in areas such as Latin America and Africa. Richard Dowd, EPA's Science Advisor, recently returned from a visit to several African nations with which we have bi-lateral relations, all of whom expressed a very particular interest in developing stronger relationships on environmental issues. The developing nations most acutely feel environmental problems where natural resource systems on which they rely for survival are threatened in some way by desertification, pollution, etc.

The problems vary around the globe in terms of what's on the top of a particular nation's agenda. But there is a growing awareness and there is a growing list of environmental problems, as well as concerned public opinion. I think global environmental affairs will move increasingly to a more prominent place on the international geo-political agenda.

**Q How would you rate EPA's overall performance?**

A We'd have to rate it pretty good. In terms of an institution that has influenced our lives in a very significant way in a very short period of time, it's probably had an extraordinary impact. The greatest impact will be felt in the future as the standards we've adopted, the technologies that we are forcing to be put in place have a real effect on the air, water, and land.

As an institution, EPA has gone through as steep a learning curve as any institution that government has ever had. When you think about it, ten years ago our knowledge about these problems was pretty thin, and we started with a very anemic intellectual bank account. When I compare where we were ten years ago with where we are today, I see a remarkable growth in our ability to do the job.

But I still see a very steep curve ahead of us, in part, because of the changing nature of the problems we're dealing with; in part, because our sense of the adequacy of the tools we have is changing.

We have not yet reached a plateau. And our growing knowledge of environmental issues and the changing environmental problems will be the most important source of institutional renewal for EPA. I don't see this institution ever going to sleep. I could see it being politically put to sleep, but I think it's a dynamic, alive place to be intellectually and in terms of working with people who have a real sense of purpose and intelligence about these problems.

Another important facet is that the Agency is doing its homework better and is able to handle its mission, in general, more effectively than it was ten years ago. So I think that EPA has been maturing as well in terms of the quality of its analysis and its policymaking.

**Q What is the most significant environmental achievement in the last decade?**

A Building environmental protection into our political value system with the institutional capacity to deal with the problem—that is really the bottom line of environmental efforts this past decade.

**Q What are the biggest jobs that are going to be facing EPA over the next ten years?**

A Coming to grips with the legacy of the chemical revolution. It will be made all the more difficult because our knowledge is not expanding at a rate that is exactly commensurate with the demand for us to take action. That is, there are still going to be potholes in our knowledge of science in issues, which will make some of the policy dilemmas very acute. The other challenge will be to be flexible, to reassess the tools that we have to get the job done, to be sure that we're using the most appropriate, innovative mix to get the job done. That will mean refining and improving the tools that we use. The more rigid the approach, the more likely will the results be limited over any period of time.

**Q How is EPA doing in the face of pressure to compromise environmental programs to make way for industry?**

A I think we've been doing pretty well. To sum it up is very difficult because these tradeoffs are rarely black and white. A good example is the steel industry, where they simply don't have enough capital to both modernize and complete the environmental job they've started, and there's a statutory deadline, and it's forcing them to make capital decisions right now. Modernization is one of the ways they can clean up, of course, but, if they are forced to have the pollution cleanup job completed at every single facility by 1982, in air, for example, then they would have to invest a substantial amount to retrofit old facilities. That money could be better spent on modernizing. It would update the steelmaking facilities and improve the environment, too.

So, what it boils down to, in terms of maintaining the environmental standards, is that we've done very well in demon-

strating flexibility on how those standards are met in the most cost effective way.

And we haven't been afraid to step up and reassess the standards themselves and make our decisions to modify them if data do not exist to support the standards originally set. One of the things that my predecessors told me was that, in a way, the Agency job during my tenure was going to be more difficult because a lot of the initial standards that were set were based upon pretty sketchy scientific underpinning. It was the best that was available, and they did the best job they could with what was available. When that scientific data base got filled in, it would mean making adjustments. Some would be toward more strict standards. In other instances, it would be toward relaxing standards that were too strict when they were initially set. I think the fastest way to obsolescence is rigid adherence to past conventional wisdom, when you have new knowledge and new facts that have eroded the underpinnings of those initial decisions. Put very simply, this Agency cannot afford to be afraid to change its mind when facts warrant it. Failure to have that kind of flexibility will tend to make it less and less relevant to a changing world.

**Q Is there an anti-regulation backlash that could hurt environmental cleanup efforts?**

A There's been a real build-up in the anti-regulation rhetoric in this country. But there was an interesting poll published in the New York Times. It was done by Union Carbide, who asked people if they thought standards were too strict or not strict enough. A series of questions was asked about occupational exposures to cancer-causing chemicals. Seventy percent of the people in that poll said they thought that standards should be more strict.

The poll covered a whole list of concerns. For example, 60 percent of those polled thought that water cleanup rules should be stricter, 65 percent wanted stricter controls on consumer products that could cause diseases such as cancer, and 70 percent favored a tightening of regulations to protect workers from on-the-job health risks. Those surveyed held these opinions even though they agreed that each of these types of regulation increase consumer costs.

We see these poll results in support of the environment in spite of the fact that the general public reaction is that we have too much regulation. Part of it is that there has been a growing frenzy about regulation which got somehow detached from the facts, a fear that environmental cleanup is hurting the economy. In fact, environmental expenditures will add something like 0.1 percentage points to the consumer price index this year. So we can hardly be said to be causing inflation. And that is before you even try to quantify the environmental benefits that—I'm convinced—offset by a wide margin the costs that are imposed.

We have created far more jobs than we cost the economy. Figures still show that the unemployment rate would be 0.4 percentage points higher were it not for environmental expenditures. And there are all kinds of benefits that we can't calculate yet in terms of more efficient use of raw materials, less waste of resources, as well as more sophisticated, subtle determinations of the effects of pollution on public health in terms of morbidity and mortality.

We'll have a much more sophisticated understanding of the benefits of cleanup efforts as time goes by. Look at the effect we have on capital spending plans in this country. On the average, environmental spending next year for U.S. industry, measured as a percent of capital expenditure, will amount to something on the order of 3.9 percent, which is pretty modest. Now that figure masks the fact that in certain industries the percentage is much higher. Steel is a good example: it will run maybe about 20 percent. But that is an anomaly in a way. That is a very dirty industry with a huge capital investment to make, and in some respects the steepest hill to climb in a relatively short period of time.

The concern I have is that the problems of a steel industry will warp the general public's perception of the effects of environmental requirements on industry as a whole. The story there is really much better than people tend to recognize, given the anti-regulatory rhetoric that they're exposed to every day. In fact, 92 percent of the major sources of industrial pollution in this country are in compliance with the initial requirements of the Clean Air and Clean Water Act or are meeting our timetables. The sure expectation at this point is that they'll complete the job. And that's a major success story.

In comparison to other nations that make environmental expenditures, the Japanese steel industry not only outspent us for environmental protection, but outspent us for modernization as well. And they did this during the height of the 1974-1975 recession.

So, the facts just don't support the generalized accusation that regulation, whether it's environmental or occupational safety and health, is at the root of our economy's problem. That has tended to be political hyperbole. I think increasingly that the issue of reindustrialization will focus on a whole range of concerns, not the least of which will be quality in corporate management—I think that'll become an issue in the 1980's.

And look again at the demographics. The generation of Americans coming along now will be the politically dominant influence.

And it is not a generation that's about to walk away from the new social contract in effect that Congress legislated, whether it's in consumer safety or environmental protection or occupational safety. □

*This interview was conducted by Charles Pierce, Editor, EPA Journal; Truman Temple, Associate Editor; and John Heritage, Managing Editor.*

# Around the Nation

## REGION 1

**Hispanic**
EPA Region 1 has launched a program to improve the Region's outreach to Hispanic communities in New England. Norma Berio, a native of Puerto Rico, has been hired to inform and involve Hispanic persons in environmental affairs in the region. Specifically, Berio will be responsible for identifying Hispanic groups in the region, determining environmental issues of concern to Hispanic communities, and translating information pieces for the Spanish-speaking public.

**Offshore**
Four applications for exploratory oil drilling permits on Georges Bank under the National Pollutant Discharge Elimination System are being reviewed and others are expected. Public notices will be issued in December and final permits should be issued by March 1981. Permit monitoring requirements related to any discharge of drilling muds are being developed to complement the biological monitoring program being prepared by the Georges Bank Biological Task Force. Consultation with the Coastal Zone Management agency and the National Oceanic and Atmospheric Administration on endangered species such as whales is underway. Pending legislation could have a bearing on the drilling muds/monitoring issues. Region 1 has designated priority energy permits or approvals and expects to have the schedule tracking and management system for these projects in place soon.

**Citizens**
Region 1 planned to hold its 9th annual Citizens' Briefing on December 5 at the Colonial Inn in Lynnfield, Mass. Citizens from all six New England States were expected to attend. Regional Administrator William R. Adams Jr. and other environmental leaders were to present highlights of the progress made in cleaning up the New England environment during 1980. Environmental merit awards were also to be presented to 10 individuals who have made significant contributions to the New England environment during the past year.

## REGION 2

**Suits**
The Justice Department on behalf of EPA has filed suit against the Non-Ferrous Processing Corporation in Brooklyn, N.Y. The suit charges that the lead smelting operation has been allowing significant amounts of lead to escape uncontrolled into the atmosphere. This is a violation of city, State, and Federal clean air regulations. The suit asks that the company be fined as well as required to immediately purchase and install all the pollution control equipment necessary to bring it into compliance with applicable laws. The maximum penalty provided by law is $25,000 per day.

The Department of Justice on behalf of EPA has also filed suit against Bridgeport Oil and Rental Service, Inc. in Logan Township, New Jersey, as well as its owners, charging that the storage and disposal of hazardous waste at their oil reclamation facility has polluted the groundwater beneath the facility and surface waters nearby.

EPA is asking the Court to order the defendants to stop the leakage and disposal of hazardous waste into the ground and water, and to undertake a program to clean up and remove the pollutants. EPA is also asking the Court to require the defendants to monitor the groundwater to determine the extent of the migration of contaminants toward local drinking water sources and to take further action as may be necessary to ensure that no further contamination enters the local drinking water supply.

## REGION 3

**Pollution Charges**
The Department of Justice, on behalf of Region 3, is suing the city of Hopewell, Va.; Continental Forest Industries; and Hercules, Inc. for violation of the Clean Water Act involving discharges to the James River. The Commonwealth of Virginia has joined in the suit against the city.

The suit alleges that Hopewell has violated its National Pollution Discharge Elimination System discharge permit limits and has accepted wastes that interfere with the treatment process at its wastewater treatment facility. As a result, the plant is discharging organic and solid wastes into Gravelly Run Creek, a tributary of the James River, in concentrations which exceed the limits in the city's permit.

Also, the Department of Justice, on behalf of Region 3, has filed suit against the Stanley Kessler Company, located in King of Prussia, Pa., charging that the storage and disposal of hazardous waste has polluted groundwater beneath the facility, contributing to the contamination of a nearby reservoir.

**Cleanup Pact**
Shenango, Inc. recently signed a consent agreement with Region 3 and Allegheny County, Pennsylvania, to bring the company's Neville Island coke and iron plant into compliance with air pollution control regulations by December 31, 1982. The company also agreed to a civil penalty of $500,000 for past air pollution violations. All but $6,000 of this penalty has been credited toward a past penalty and the use of pollution control equipment which is more efficient than that required in present regulations. The agreement ends several years of negotiations.

## REGION 4

**Island Study**
The Region 4 staff is working with officials of Hilton Head, a resort island off the South Carolina coast, on a major study of nonpoint source pollution. The study emphasizes the management of island water resources in order to minimize the adverse impacts of future development on nearby waters, especially fragile shellfishing areas and bathing beaches. Island officials say they are willing to regulate development through stricter standards for building permits.

**Barge**
The Region 4 Environmental Emergency Branch was called on recently to investigate reports that a wooden barge, carrying mercury-filled casks, was lying on the bottom of south Florida's Lake Okeechobee. There were believed to be some 40 containers holding about 32 tons of mercury. An initial search turned up nothing.

## REGION 5

**Great Lakes**
A photographic exhibition entitled "Great Lakes, America," exploring the recreational and commercial uses of the five great inland seas and their tributaries, opened recently at Chicago's Museum of Science and Industry. The 62-picture photographic essay is sponsored by the Great Lakes National Program Office, headquartered in Region 5.

The Program Office was established in 1977 to help implement the Great Lakes Water Quality Agreement between the United States and Canada, first signed in 1972 and updated in 1978. Implementation of the Agreement, the objective of which is to preserve the delicate land, air, and biological ecosystem of the world's greatest freshwater resource, involves protection of the Great Lakes and the rivers and streams which flow into them from direct discharge of contaminants into their waters and from agricultural runoff and air pollution.

The exhibit is being sponsored to remind Americans and Canadians who live around the Great Lakes not only of their beauty and richness as a resource but also of their frailty and vulnerability, and the urgent need to protect them from degradation. The exhibit was scheduled to close in Chicago December 14,

then travel to other major institutions in Region 5 States, to Washington, D.C., and to Great Lakes shore cities in New York, Pennsylvania, and Ontario.


**Hurricane**
Following Hurricane Allen, Region 6 sent six teams of engineers to the Texas coast area at the request of the Federal Emergency Management Agency. The teams looked at the effects of the hurricane on public water and sewage facilities along the coast and assessed the cost of repairing these facilities. The preliminary estimate for rebuilding the storm-damaged facilities is $5.5 million.

**Toxics**
The Department of Justice, on behalf of Region 6, has filed a suit seeking the clean-up of a hazardous waste site at Criner, Okla. In its complaint, the Agency charged that toxic chemicals are entering Criner Creek, a tributary of the Washita River, and are escaping into the air, groundwater and surrounding soil. Chemicals found on the site include dioxin, chlorinated phenols, chromium, toxaphene, asbestos, lead and cyanide.


**Cleanup Suit**
EPA has charged American Oil Company (AMOCO) with polluting the Missouri River east of Kansas City, Mo. At EPA's request, the Justice Department filed suit September 3 against AMOCO in U.S. District Court. The complaints asked for civil penalties which could amount to as much as $10,000 per day of violation and for an injunction to permanently stop the refinery, located at Sugar Creek, from discharging excessive amounts of various pollutants at two points along the river.

EPA alleges that AMOCO released excessive amounts of several categories of pollutants during 51 of the 54 months since a permit was issued for a wastewater lagoon at the facility in January, 1976.


**Air Quality**
Helping Indian tribes and Pueblos interested in planning and developing their own reservation's air pollution control programs was the focus of a two-day meeting held in Denver recently. This Air Quality Workshop was presented by Region 8's Air Branch and the Council of Energy Resource Tribes' Environmental Analysis Office. The Council has contracted with Region 8 to provide technical assistance for air program matters to Indian tribes and Pueblos during fiscal year 1981.

In a related matter, the Region issued a $15,000 grant to the Montana section of the American Water Works Association for the training of Indian operators of drinking water treatment systems on reservations in Wyoming and Montana. The systems in which the operators work provide drinking water to an estimated 15,000 people on eight reservations.

**Agreement**
Top officials of U.S. Steel and EPA have reached an agreement on a comprehensive pollution control plan for the company's plant at Provo, Utah. The pact is subject to the approval of the U.S. Justice Department, Utah's Health Department, and the U.S. District Court in Salt Lake City, Utah.

EPA Regional Administrator Roger Williams said the plan will bring particulate emissions down from a 1977 level of about 17,000 tons per year to an estimated 3,000 tons per year by December 31, 1982.

Emissions from the plant have been the principal contributor to health standard violations for particulates in Utah County. The reduction will mean that health standards will be met consistently if other sources in the county are also controlled adequately.


**Noise**
Twenty incorporated cities and six agencies, representing an estimated five million people, participated in a city-county noise awareness conference sponsored recently by the Los Angeles Department of Health Services. The conference was inspired as a follow-up to an EPA-assisted survey of noise pollution in Los Angeles County taken by the county. The EPA provided conference participants with access to survey equipment to assist cities to form a general plan—the prerequisite to zoning and noise ordinances, and the first step to a quiet environment.

**California**
The California Tomorrow Organization, whose goals are to explore, demonstrate, and educate the pubic on major California environmental problems, has initiated the California 2000 project. Region 9 will provide relevant information and serve as a liaison with the project.The project will seek to develop a program and consensus for improving the planning procedures by which mid- and long-term problems of significance can be identified and managed.


**Refinery**
Construction is underway in Valdez, Alaska, on the Alaska Petrochemical Company (ALPETCO) refinery and petrochemical complex that will process 100,000 barrels a day of crude oil from Alaska's North Slope into unleaded gasoline and other petroleum products. All Federal and State environmental permits were issued to ALPETCO within 19 months from the time that EPA agreed to prepare an environmental impact statement on the project.

"EPA's permitting process did not cause ALPETCO to lose a single day in moving toward the start of construction," said Donald P. Dubois, EPA's Region 10 Administrator.

"EPA and ALPETCO worked on parallel tracks," he said, "with EPA performing all its environmental reviews at the same time ALPETCO conducted geological assessments, made a final site selection and completed its plant design. We worked fast and still managed to produce permits with environmental integrity."

As an example, Dubois noted the EPA air quality permit. It calls for only 48 tons of sulfur dioxide to be emitted annually from ALPETCO's fluid catalytic cracker, as opposed to 963 tons a year that ALPETCO proposed in its original permit application. Similarly, the permit allows two tons of hydrocarbon emissions from the refinery's product loading terminals; originally, ALPETCO had proposed that the terminal be allowed to emit 200 tons a year. □

**States Served by EPA Regions**

**Region 1 (Boston)**
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
617 223 7210

**Region 2 (New York City)**
New Jersey, New York, Puerto Rico, Virgin Islands
212 264 2525

**Region 3 (Philadelphia)**
Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia
215 597 9814

**Region 4 (Atlanta)**
Alabama, Georgia, Florida, Mississippi, North Carolina, South Carolina, Tennessee, Kentucky
404 881 4727

**Region 5 (Chicago)**
Illinois, Indiana, Ohio, Michigan, Wisconsin, Minnesota
312 353 2000

**Region 6 (Dallas)**
Arkansas, Louisiana, Oklahoma, Texas, New Mexico
214 767 2600

**Region 7 (Kansas City)**
Iowa, Kansas, Missouri, Nebraska
816 374 5493

**Region 8 (Denver)**
Colorado, Utah, Wyoming, Montana, North Dakota, South Dakota
303-837-3895

**Region 9 (San Francisco)**
Arizona, California, Nevada, Hawaii
415 556 2320

**Region 10 (Seattle)**
Alaska, Idaho, Oregon, Washington
206-442 1220

dedication and wisdom by people in and out of government if the current chasm between the public and private sector is to be closed. I believe it is well worth the effort because not only the future of the environment but of free institutions is at stake.

The essential question for us to answer in America today is: Are we a wise enough people to achieve our environmental goals and minimize the impact on other legitimate social concerns—all within the context of freedom? To the extent we are capable of answering that question in the affirmative, we will have shown the rest of the world, in the best way possible, that the path of freedom is the one to which all should repair. It is very much the job of every employee at EPA to show our country how the environment can be protected without doing violence to freedom.

My experience at EPA convinced me that we had the capacity to attract the best and the brightest our country could produce. I have seen no diminution of that capacity in the intervening years. It is very much up to you—the best and the brightest—to ensure that brilliance and wisdom coincide. You remain in the forefront of change in our country. Work always to effect that change in the public interest you serve, and don't lose sight of the need to preserve certain enduring values like freedom and justice in the process.

If you do that you will earn and deserve the undying gratitude of your fellow countrymen. □

*Ruckelshaus was EPA's first Administrator and is now Senior Vice President of the Weyerhaeuser Co.*

## EPA's Task

*Continued from page 7*

this connection, there is a growing recognition in our society that over-reliance on adversarial approaches to the resolution of issues can be excessively costly in economic terms as well as productive of what sometimes seems almost endless delay in decision-making. EPA has a particular responsibility and opportunity, it seems to me, to take a public lead in pursuing alternative modes of conflict resolution in the environmental area. Effective regulation must include prompt resolution of issues. Our society needs to innovate in this regard. The Agency should be alert to counter the bureaucratic tendency to resist innovation and "stick by the book."

The American people have made it clear that they are willing to pay the price for a clean and healthy environment. But this willingness could be jeopardized if they are not fully informed of what the trade-offs are or lose their confidence that the costs are no larger than they need be and that the benefits are worth those costs. EPA has demonstrated its determination to minimize the social and economic impacts of its efforts—to do all it can to meet its responsibilities in ways that will not put people out of business or out of work or impose excessive and unreasonable costs. When I was Administrator, we were confident that the Agency had the most open and rigorous process of economic impact analysis in the entire Federal Government. I have no reason to think that this situation has changed, and I hope EPA will continue to improve that process.

EPA also has undertaken a major effort to simplify and streamline its regulations. To carry out its regulatory responsibilities EPA has issued a significant body of complex regulations. But it must also recognize that its success in the future will be measured by how clean the air and water become, not by the quantity and complexity of its regulations, and it has been committed to a continuing program of regulatory review.

### Action-Forcing Standards

It has been suggested that Congress in its environmental legislation set standards and timetables for their implementation that were simply not achievable, that EPA had been given an impossible mandate to carry out. I certainly agree that EPA in the past has had a very difficult mandate to carry out, one not fully achievable in all respects within the statutory timetables even if it had all the resources it might want. At the same time, I have been in full agreement with the Congressional approach of setting standards and timetables which are action-forcing and technology-forcing. To do otherwise would be to require only the lowest common denominator of what is currently achievable. Such an approach would secure the best compliance record and the least overall progress. The approach actually adopted, particularly in the Clean Air Act, has forced technology and brought about strong progress. The disadvantages of such an approach are that a certain amount of nonattainment on schedule will inevitably occur and that there will be increases in economic cost and technological inefficiency in some cases. In my opinion, these disadvantages are far outweighed by the advantages.

The Agency has had the most success in carrying out those parts of our environmental laws that involve the control of specific sources of emissions or effluents by the application of technology. It has had the least success in trying—often under deadlines imposed by the courts—to require pollution control measures that have implications for changes in lifestyles and land use patterns. These are changes that can take place only over a period of time. They entail very basic social and economic and environmental choices and trade offs that can only be made by the people involved through the political process at the State, local, and regional levels.

One of the major challenges to our society, and specifically to our States and localities, is to deal effectively with what might be called the issues of growth—the issues involved, for example, in trying to preserve and maintain air quality, to control nonpoint source water pollution, and to relate and reconcile different environmental concerns such as clean air and clean water with each other and with social and economic concerns such as housing, and jobs, and energy. These issues will involve an increasing shift in emphasis from the abatement to the prevention of pollution. In terms of technology, we need to seek over the coming years not simply to encourage the development of more sophisticated kinds of "add-on" controls, but to push as effectively as we can for basic changes in the processes themselves.

### The Need For Preventive Action

As we move to put increasing emphasis upon the prevention as well as the control of pollution, there is a growing body of evidence that some of our most effective "health care" dollars may well be the "disease prevention" dollars we spend to cut and control pollution and other agents we introduce into our own environment. The Department of Health, Education and Welfare (now the Department of Health and Human Services) a few years ago estimated that 88 percent of our total national health bill goes for cure and care rather than prevention. In a recent year we spent around $1 billion on research into cures and causes of cancer. The National Cancer Institute has estimated that the actual cost of cancer to people amounts to tens of billions of dollars a year. Yet the World Health Organization has estimated from 60 to 90 percent of all cancer is the result of "environmental factors" in the broadest sense of that term. As the Forward Plan for Health prepared by HEW has stated: "In recent years, it has become clear that only by preventing disease from occurring, rather than treating it later, can we hope to achieve any major improvement in the Nation's health."

All of this has underscored the urgency of measures such as the Toxic Substances Control Act to give us better information

A snow covered glacier field high on the slopes of Mount Rainier in Washington. The peak is part of Mount Rainier National Park.

and regulatory capacity for coping with the many new chemical compounds that we have been introducing into the commercial market each year. It also underscores the fact that the struggle against disease must increasingly be waged, not simply in the hospitals and the doctors' offices, but on our farms, in our factories, and in our personal lifestyles. And it suggests that, if—in the words of one medical authority—"environmental disease is becoming the disease of the century," then environmental protection, in the broadest sense of the phrase, must increasingly become the most important ingredient in any national health program.

If there have been doubts that "environment" is truly a global concern, and that all nations have a very real stake in the development of effective international efforts in any environmental protection and improvement, they should have been dispelled by the growing awareness of the international scope and seriousness of the pollution of the marine environment, the spread of chemical contaminants, the problem of acid rain, and the depletion of the layer of ozone that shields mankind from harmful solar rays by the release of fluorocarbons into the environment, among other problems. The build-up of atmospheric carbon dioxide from the combustion of fossil fuels has enormous potential significance for global climate and world food production.

## Sharing Control Technology

We can expect, in the years ahead, increasing pressures on EPA to share its know-how on pollution control with a developing world faced with extraordinary problems arising from population growth, food demand, and industrial development. The growing global demand for food will require us to establish a more precise policy on how best to control the global release of bioaccumulative, persistent pesticides. Developing nations will increasingly discover human health problems associated with the vast array of chemical compounds currently in use and under development. We will, as a result, face growing requests from developing countries for EPA experts to help in the establishment of environmental programs and to deal with specific environmental problems.

EPA can head into the 1980's with a clear sense of accomplishment and with a far better idea than we had ten years ago of the problems that we face and of the things we need to do.

EPA can take great pride in the fact that, faced with an extraordinarily complex array of issues and statutory mandates, it has put in place much of the regulatory machinery needed to ensure the eventual achievement of a sound and healthy environment for all.

I foresee a major challenge in the next year or two to our whole environmental protection system, particularly to the Clean Air Act. EPA should welcome constructive review. EPA should take the lead in seeking out and correcting cases of excessive or ill-founded regulation. EPA should, as I suggested earlier, be innovative and open in finding ways to expedite environmental decision-making, such as is involved in the siting of plants and other facilities. I have always believed that we need greater room for administrative flexibility and the exercise of discretion—always subject to active Congressional oversight—in the implementation of environmental statutes. But our society must firmly resist efforts to roll back our historic environmental protection achievements. We must never forget that a healthy environment and the continued healthy functioning of the natural systems of the Earth are the foundations upon which all human activity, progress, and welfare must ultimately depend.

EPA has a proud and vital mission. Environmental problems are world-wide. They can be expected to become tougher rather than easier. The World Conservation Strategy developed by the International Union for the Conservation of Nature with World Wildlife Fund support and the Global 2000 Report of the Council on Environmental Quality help outline the problems, set priorities, and recommend national and international action strategies. The United States must undertake a leadership role in addressing these issues worldwide, and EPA must assume a major part in that critical task. □

*Train was EPA's second Administrator and is now President of the World Wildlife Fund, U.S.*

A review of recent major EPA activities and developments in the pollution control program areas.

## AIR

**Bubble**
In a regulatory reform move with national implications, EPA is proposing approval of a New Jersey program which will make the Agency's air pollution bubble policy more attractive to industry in that State. The bubble policy, established by EPA in late 1979, allows industry management to figure out the best way to clean up air pollution at individual plants, provided overall clean air requirements are met. EPA is now proposing in New Jersey to put final approval of a bubble plan in the hands of State officials, a time-saving action. The proposed step would apply only to hydrocarbon emissions, a prime factor in the formation of smog.

**Power Plant**
EPA Region 8 is proposing to deny a construction permit to the Nevada Power Company because the company failed to show that it could build the proposed Warren Valley Power Plant without harming the air quality in nearby Zion National Park. Air impact analyses done by the company were deficient, according to EPA, and failed to show the legally required protection for air quality in Zion. EPA analysis of the company's data showed there would be violations of sulfur dioxide limits at Zion. Officials in Region 8 said they will consider a new application from Nevada Power offering alternate sites farther from Zion though, with a new site, the plant will have to have the best available equipment for controlling air pollution.

**Fuel**
The U.S. auto industry is offering more fuel efficient cars for sale than ever before, according to the 1981 EPA mileage estimates released recently by EPA.

Although Volkswagen of America's Rabbit diesel topped the list at 42 miles per gallon (mpg), U.S. manufacturers produced seven cars with better gas mileage than the highest domestic car in 1980, which was rated 26 mpg.

In 1981 the Chevrolet Chevette, Ford Escort, and Lincoln-Mercury Lynx are all rated at 30 mpg. The Dodge Omni and the Plymouth Horizon are tied at 28 mpg. A Dodge 024/De Tomaso and a Plymouth TC3/Turismo also tied at 27 mpg.

The only mid-size cars to appear in the top rankings this year are the new Dodge Aries and Plymouth Reliant. These cars are rated at 25 mpg.

**Control Dropped**
The EPA is dropping an emission control requirement for 1982 and later model cars and light trucks that might have cost automakers millions of dollars a year to meet.

Specifically, the Agency will not require that 1982 and later vehicles meet exhaust cleanup standards at all possible idle-speed settings of the carburetor.

An Agency spokesman said that new data on cars built in the last few years showed that idle speed changes were less likely to increase exhaust emissions than EPA originally believed.

## ENFORCEMENT

**Message**
Sears, Roebuck, and Company, Inc., the world's largest retailer, will issue a nationwide environmental message to consumers as the result of a settlement with the EPA.

Sears will mail a message to its approximately 25 million credit card customers about how the use of unleaded gasoline results in reduced air pollution; a similar message will be carried on more than 16,000 Sears vehicles across the Nation.

**Agreement**
EPA has signed an agreement with U.S. Steel Corporation that will bring all air pollution sources at the company's Lorain, Ohio, plant into compliance with applicable pollution control regulations by December 31, 1982.

**Recall**
General Motors Corporation will voluntarily recall approximately one million of its 1977 and 1978 passenger cars because they may be failing to meet Federal tailpipe air pollution standards for nitrogen oxides, according to an announcement made recently by EPA. The vehicles to be recalled (except for those built for sale in California) have 231 cubic inch displacement V-6 engines. Those in the model years not having this type of engine are not subject to the recall.

## HAZARDOUS WASTE

**Cleanup Suits**
On behalf of EPA the Department of Justice has taken the following actions:

- filed a suit against the operator and owners of a hazardous waste dump in Gary, Ind. The government's suit contends the 20-acre dump, which contains more than 500 drums of toxic chemicals, poses an *imminent* and substantial danger to human health and the environment.
- filed suit against the owners and operators of two hazardous waste disposal sites in southeastern Illinois, charging that the sites are discharging toxic chemicals into nearby waterways. One facility is in Greenup and the other in Olney.
- filed a suit against BASF Wyandotte Corporation charging that a chemical and industrial waste dump formerly owned by the company is contaminating groundwater and the Detroit River near Riverview, Mich.
- filed suit seeking cleanup of the Conservation Chemical Company's hazardous waste site in Kansas City, Mo., and an end to illegal toxic discharges from the site. The suit was filed against the Conservation Chemical Company, owners and operators of the site, as well as Kansas City Power and Light Company and Mobay Chemical Company. The latter two own property adjoining the site and are named to ensure that remedial actions requested by EPA can be fully implemented.
- filed suit against the Reilly Tar and Chemical Company of St. Louis Park, Minn., for polluting groundwater. Much of the groundwater beneath the site is used as a source of drinking water for the city. The plant at the site has been closed since 1972.

## NOISE

**Airports**
In spite of the costly and unnecessary high noise experienced by people in areas near large airports, little is being done to prevent similar occurrences in areas near expanding general aviation airports, according to a Noise Conference Report released recently. General aviation airports are those lacking commercial air service. The conference was sponsored by EPA and the Georgia Institute of Technology.

## PESTICIDES

**Fire Ants**
An insecticide called Amdro has been given conditional approval by EPA for use against fire ants. The stings of fire ants are painful to people and their mounds can disrupt farming operations in the nine Southern States affected.

The registration came in time for the aerial and ground application against fire ants which had been planned in the fall in the States affected by the ants—Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas—in conjunction with the U.S. Department of Agriculture.

**Herbicide**
Rohm and Haas Company of Philadelphia has agreed with EPA to stop selling and to recall from its dealers, distributors, and users all existing stocks of a herbicide called TOK.

Evidence from a study supported by the company and in other studies shows the weed killer causes birth defects, mutagenic damage (alteration of inherited genes), and cancer in test animals.

The company advised EPA that it will not sell the product again until it can demonstrate to the satisfaction of EPA and affected States that TOK can be applied under conditions that do not present an unacceptable risk to persons handling it, to field workers, and to consumers. EPA said the

people at greatest risk are women workers exposed to TOK in the field.

## RESEARCH

**Incineration**
Incineration looks like the most promising near-term technique for disposing of hazardous wastes, according to EPA's Office of Research and Development. That is the conclusion reached in its research summary, *Controlling Hazardous Wastes*, which contains an overview of the current projects dealing with this problem and possible solutions. Copies are available from ORD Publications, U.S. EPA, CERI, Cincinnati, Ohio 45268, or call (513) 684-7562. The report number is EPA-600/8-80/017.

**Fuel Savings**
EPA recently announced the results of a study for cutting fuel costs by using warm water from electric generating plants to heat commercial greenhouses.

Agency officials say that the results showed an estimated savings of $13,000 in overall operating costs per acre and 50,000 to 60,000 barrels of oil per year in a northern U.S. climate. These savings are based on 1978 fuel costs. Because fuel costs for 1980 would be approximately twice as high, savings would be even greater.

The three-year, million-dollar study was a joint effort of EPA's Industrial Environmental Research Laboratory in Research Triangle Park, N.C., and the Northern States Power Company of Minneapolis, Minn.

**Nuclear Tests**
EPA has released its annual report on radioactivity from underground nuclear tests. Among other things, the results show that underground nuclear tests conducted by the Department of Energy at its Nevada Test Site released no measurable radioactivity in 1979 to public and private areas surrounding the test site.

Single copies of the report, "Offsite Environmental Monitoring Report for the Nevada Test Site and Other Areas Used for Underground Nuclear Detonations: January through December 1979," can be obtained from the Environmental Monitoring Systems Laboratory, P.O. Box 15027, Las Vegas, Nev. 89114.

**Film Award**
EPA's Kerr Environmental Research Laboratory in Ada, Okla., received an international award for the film, "Hold This Land."

"Hold This Land" received the award of the Federal Ministry of Agriculture and Food Industry at the 7th International Film Festival of Environmental Problems held in Ostrave-Poruba, Czechoslovakia, earlier this year. The film concerns irrigation-related soil erosion and sedimentation water pollution problems.

**Long Term**
EPA recently announced the establishment of three new exploratory research centers to focus on long-term environmental problems. They include an Ecosystem Research Center to be developed at Cornell University under the direction of Dr. Simon A. Levin; an Intermedia Transport Research Center to be developed at the University of California at Los Angeles under the direction of Dr. Sheldon K. Friedlander, and a Waste Elimination Research Center to be developed at the consortium of the Illinois Institute of Technology and the University of Notre Dame under the direction of Dr. James W Patterson of the Illinois facility.

**Pollutant**
The EPA has published a research summary, *Controlling Nitrogen Oxides*, which details research efforts to improve control technologies to limit nitrogen oxide emissions. According to an Agency official, recent research indicates that nitrogen oxides could be one of the most troublesome air pollutants of the 1980's. Copies can be obtained from the U.S. EPA, Center for Environmental Research Information, 26 West St. Clair Street, Cincinnati, Ohio 45268. The report number is EPA-600/8-80-004.

## TOXICS

**Asbestos**
Proposed new rules from EPA's Office of Toxic Substances would require all primary and secondary schools to inspect their facilities for potential asbestos hazards. Samples would have to be taken from likely sources of contamination, such as crumbling insulation, so that the severity of the problem can be assessed through laboratory testing. EPA estimates that over 10,000 public and private school buildings contain asbestos that could cause health problems.

**EPA Aid**
Some small firms may experience difficulty providing EPA required information on new chemicals because they lack adequate manpower and resources to meet reporting requirements passed by Congress in 1976. To help solve this problem, EPA decided recently to try out an assistance program for small firms within 250 miles of Chicago, Ill., and Summit, N.J. If the trial projects prove successful, the Agency will consider setting up similar programs in other parts of the country.

**Chemical**
EPA has proposed to block the commercial introduction of a new chemical pending the development of additional information on its human health risks. This information is needed to address concerns that the chemical might cause severe skin reactions among those exposed to it.

The Agency estimates that over a million people could come into contact with the substance under the proposed manufacturer's production and use plans.

Under terms of the 1976 Toxic Substances Control Act, the name of the manufacturer, the exact use proposed for the new chemical and its specific chemical identity cannot be revealed publicly by EPA because the company involved claims this to be "confidential business information." However, the substance may be broadly described as "substituted benzene, reaction products of C22-C30 alkenes" for use as a lubricant additive.

**Prevention**
EPA has proposed new rules that would allow the Agency to evaluate possible health and environmental problems from new uses of certain chemicals that are now exempt from safeguards contained in the Toxic Substances Control Act.

The proposed rule would require that, if a substance not normally covered by the law's safeguards is processed for a new use or end-product not exempted by this law, it will be subject to EPA review so that possible future health and environmental problems can be anticipated and avoided.

## WATER

**Wastewater**
EPA is conducting a series of studies with local governments across the country using wastewater to create or preserve wetlands for wildlife and migratory waterfowl.

Wastewater provides valuable nutrients for marsh plants, which in turn provide homes for wetland animals. Preliminary findings to date indicate no problems with accumulation of toxic materials in plants or animals.

**New Manual**
EPA has announced the publication of a 43-page manual entitled, "Recreation and Land Use: The Public Benefits of Clean Waters." The manual is free. Copies can be obtained from EPA's Public Inquiries Center (PM-215), Washington, D.C. 20460, (202) 755-0707, and through the Department of Interior, at the Office of Heritage Conservation Recreation Service, Division of Community and Human Resources Development, Washington, D.C. 20243, (202) 343-5571, or from any regional office of either agency.

**Filters**
A new report on the effectiveness of home drinking water filters is now available from the EPA. Several different types of filters, ranging in cost from $10 to more than $400, were tested for their effectiveness in controlling various contaminants in drinking water. Copies of the filter study and a related fact sheet may be obtained from EPA's Public Inquiries Center (PM 215), 401 M Street, S.W., Washington, D.C. 20460. □

**Clinton Hall**

He has been named director of EPA's Robert S. Kerr Environmental Research Laboratory in Ada, Okla. He was most recently Associate Deputy Assistant Administrator for Environmental Processes and Effects in Research and Development at headquarters. Hall takes over his new position at a period when both the public and Congress are interested in the investigation of groundwater, which is the primary concern of the laboratory.

He received his bachelor's degree in geology from the University of Delaware, and his master's degree in groundwater hydrology from the University of Connecticut.

He succeeds William Galegar, who stepped down after 10 years as director of the facility to accept an Intergovernmental Personnel Act Assignment with East Central University in Ada. In Galegar's new role, he will work at strengthening the relationship between the laboratory and the school, where he is a Visiting Professor of Environmental Science. In addition, he will engage in various research endeavors.

**Jeffrey G. Miller**

The President has approved and sent to the Senate for confirmation Miller's nomination as Assistant Administrator for Enforcement. He is currently serving in an acting capacity in that role. The Assistant Administrator is responsible for enforcement of EPA's programs involving water, air, hazardous and solid wastes, toxics, pesticides, drinking water, and noise.

Prior to assuming his current position, he was the Deputy Assistant Administrator for Water Enforcement. He served in that position for four years, and was responsible for managing the National Pollutant Discharge Elimination System including the issuance of permits and assuring compliance with the Clean Water Act. He has held several other administrative positions within EPA including the top enforcement job in EPA's Boston regional office.

Before joining the Agency, he was associated with a Boston law firm, and helped develop a consumer rights program with the Boston Legal Assistance Projects.

He received his bachelor's degree in political science from Princeton University in 1963, and his law degree from Harvard University Law School in 1967.

**William J. Librizzi**

He has been named Director of the Surveillance and Analysis Division for Region 6. He was most recently Deputy Director of the Air and Hazardous Materials Division for Region 2. He has also held several professional and managerial positions with EPA in the areas of water resources and toxic substances. In his new position, Librizzi will direct a staff of 86, whose responsibilities include emergency response to oil and chemical spills, field inspection of hazardous waste sites, and general data-gathering to support the administration and enforcement of EPA programs in the region.

A registered professional engineer, Librizzi is a graduate of Newark College of Engineering and received his master's in civil engineering from New York University.

**Region 2 Gets Award**

The Utility Contractors Association of New Jersey presented its 1980 Public Service Award to the EPA Region 2 New Jersey/Caribbean Water Programs Branch in recognition of its exemplary record in processing New Jersey's clean water construction grants. During fiscal year 1980, Region 2 obligated $207.6 million for 121 projects in New Jersey alone.

**Joseph J. Zedrosser**

He has been named Regional Counsel for EPA Region 2. He was most recently with the New York State Department of Law Environmental Protection Bureau where he served for six years as Assistant Attorney General. He also has served with several private law firms, the Legal Aid Society, and the Bedford-Stuyvesant Community Legal Services Corporation.

Zedrosser has served as a member of several bar association committees on energy and the environment, and has lectured on environmental regulation of hazardous substances and oil. He received his bachelor's degree from Marquette University in 1959 and his law degree from Harvard Law School in 1963.

A new $3.5 million laboratory was dedicated in Annapolis, Md. in October by EPA. Assisting in the ceremonies were (from left) Jack Schramm, Region 3 Administrator; Maryland Governor Harry R. Hughes, and Orterio Villa, Director, EPA Central Regional Laboratory. The new facility is staffed by 40 persons and is one of the most modern in the country for environmental analysis.

Dear Editor:

I read with interest the article in the October issue of the EPA Journal on Environmental Science in the 1980's.

What emerged from this article is the preoccupation of the scientists with the technical aspect of specific problems, as they should be. But it is astonishing that not a single scientist alluded to the need to communicate with the public about these issues. Nowhere was mentioned the importance of the news media as an available and indispensable channel of communications, nor did anyone mention the critical role played by public opinion in supporting national policies that are influenced by the work of the scientists.

There's not much point if scientists through their research propose more effective ways to deal with hazardous waste or groundwater contamination if the public does not understand these problems. It is only an informed and motivated public that will support the political and economic action designed to mitigate the effects of these toxics on human health and environment. When will scientists understand this basic fact of political life?

Dr. Edward Wenk does mention the need for scientists to "help a confused public," but only in passing. What is needed is for scientists to cooperate actively with the news media in educating the public on the issues. This can be done only if scientists are available to the reporters and editors writing about the vast range of environment and health issues that directly affect the lives of all Americans.

You may be interested to know that the Center is dealing with the problem of scientist/media communications. We have organized a national network of over 1,000 specialists on toxic substances which is available to reporters and editors writing about the subject. The specialists are drawn from government, industry, labor unions, universities, and environmental organizations. They have agreed to answer media queries as a public service. In December, CONTACT: Toxics, a guide to these specialists, will be published and will be offered to over 2,000 daily newspapers and radio and TV newsrooms. It will contain the name, address, affiliation, biographical information, and a telephone number. All the reporter has to do is pick up the phone.

Funding support for this project has been provided by the National Science Foundation, corporations, and foundations.

At the Center, we find the Journal an interesting and useful source of information. Keep up the good work.

Whitman Bassow, Ph.D.
Executive Director
World Environment Center
300 East 42nd Street
New York, N.Y. 10017

October 24, 1980

# The Approach of Winter

On a recent golden autumn afternoon a sudden thump sounded at the window of a house high on North Mountain near Winchester, Va.

An inspection outside disclosed that a small bird, lying dead on the ground, had apparently crashed into a pane. The brilliant yellow-green breast and white mid-tail stripe helped identify it as a magnolia warbler, one of the many of these butterflies of the bird world that migrate hundreds of miles every fall seeking warmer climates.

These extraordinary birds, often marked by stunning color patterns, follow the ancient imperative for much of the animal world as winter approaches: migrate, hibernate, or starve.

Like humans, they are usually not designed for the cold temperatures winter will bring when it arrives in December on the great wheel of time.

The degree of cold varies each year, and about once in every decade we have what scientists call a "test" winter when the temperatures are unusually harsh.

In the animal world thousands of creatures can freeze to death or perish from starvation.

Tiny feathered corpses litter the ground when the stinging winds of an early blizzard catch song birds by surprise and bury their seed food under mounds of snow.

Huge numbers of waterfowl also die when ice seals off their aquatic plant food, and the fish below perish when the thickening ice reduces their supply of oxygen.

White-tailed deer often starve to death when heavy snow imprisons them in the deep woods where they have taken refuge. Their sharp hooves punch through the deep drifts when they are chased by predators such as wild dogs which can bound over the crusted surface.

The strategy used by deer to survive a winter is to hide and conserve as much strength as possible. A chase by dog packs or snowmobiles can exhaust their limited energy.

Unlike elk, deer have great difficulty digesting hay that people provide to help them through the winter. Since deer need the micro-organisms from woody plants for digestion, some conservation agencies knock over trees and bushes to provide natural browse for these animals. Many deer also fall on ice, sometimes sliding to their death over cliffs or down hills and onto highways.

Yet, after millions of years of life on Earth, wild creatures have learned ways to conquer the challenge of winter. Survival in nature demands excellence in the animal and a livable environment. Ice and snow help eliminate the unfit, thus leaving more of the available food for the survivors.

Approximately two thirds of the birds in the northern United States and Canada fly south in winter, many going to Central and South America.

Great flocks of hawks, geese, and waterfowl are among these birds threading their way through valleys on the major flyways to the south. Hundreds of bald eagles desert Canada every winter for warmer hunting grounds in the United States. Some butterflies, bats, and whales also head for the tropics.

Among the animals that remain in the north during winter, frogs and turtles bury themselves in the ooze of mud at the bottom of ponds, lakes, and swamps.

Each fall animals, such as the ground squirrel and woodchuck, gorge themselves to prepare for the trance-like state known as hibernation.

A butterfly that hibernates, rather than migrating south like many of its kind, is the mourning cloak. It is able to survive because of chemical changes in its body that provide a type of anti-freeze.

Other animals, such as the skunk, raccoon, and black bear, spend the winter in a dormant state, a deep sleep, which permits them to wake up and search for food on mild days.

Among those who stick it out during winter weather, the beavers, minks, and muskrats grow thick coats, and the ptarmigans, snowshoe hares, and longtail weasels all develop white plumage or fur for camouflage.

The fall migration of animals and birds from northern latitudes occurs all over the world. In Europe storks begin their annual trips from Holland across the Mediterranean to the northern coast of Africa. Some high-flying geese reportedly cross Mount Everest to reach warmer climates.

The migrating birds can sometimes be seen silhouetted against a full moon in the night sky, where the rising of Orion, brightest of constellations, higher and higher in the east, is also one of the harbingers of winter.

With the arrival of the cold season, our forests will be enveloped by the quiet of winter. Few birds sing. The silence is broken only by the booming of ice splitting on some nearby lake or the muffled roar of a mountain stream bank full with snow melt.

While winter can be a time of harsh testing for many plants and animals, others benefit. The predators easily can find the tracks of their prey in the snow, and some plant seeds must be nipped by cold or they will not sprout.

Although a winter landscape after an ice storm may appear beautiful but sterile, life endures. The ice-enshrouded and glittering trees and shrubs are supported by the food made in their leaves in the summer and now stored in their roots and stems. Under the bark and in the wood are billions of insect eggs and larvae, part of the food chain which supports us all and another sign of tomorrows to come.

Even on the first day of winter on December 21, the buds already swelling on tree branches promise the arrival of yet another spring. And, after this winter solstice, each day will be a little longer as the life-giving sun begins its slow climb to the zenith of June.

—C.D.P. □

## News Briefs

**EPA Scientist Honored**

Congress recently passed a law that names a major research facility after an EPA scientist. The measure officially designates the Environmental Research Center in Cincinnati, Ohio, the "Andrew W. Breidenbach Environmental Research Center." Breidenbach, who died earlier this year, was an internationally recognized environmental scientist. He had served EPA in many posts, including Assistant Administrator for Water and Hazardous Material.

**EPA Sets Standards**

Final air pollution standards set by the EPA will cut particulate emissions from new glass manufacturing plants by approximately 90 percent. If left uncontrolled, pollution emissions from new furnaces would total about 5400 tons per year. The new EPA standards, however, will limit particulates or dust material to about 600 tons annually. The particulates emitted by glass melting furnaces endanger public health and welfare.

**EPA Proposes Restrictions**

The EPA has proposed to impose restrictions--and in some cases, bans--on the use of strychnine to control rodents and other animals and birds that feed on farmers' crops. The use of strychnine as a rodenticide, said EPA, carries too great a risk of killing unintended animal victims to allow its unrestricted use to continue.

**Waste Burning**

The EPA and the Department of Commerce's Maritime Administration have announced an inter-Agency program to develop the Nation's capacity to destroy hazardous wastes by burning them at sea in incinerators aboard specially-equipped ships.

the various laws passed in the last ten years is an essential approach to environmental protection. Any weakening of this comprehensive program for the environment, either inside or outside the plant, is bound to have on adverse effect on the health of both workers and the communities in which they live.

We must maintain our resolve that the laws we have passed for worker and environmental protection are not diminished. A lessening in any area of environmental protection would mean an eventual lessening in all.

**David M. Roderick**
Chairman, Board of Directors
United States Steel Corporation

The most significant environmental achievement of the last decade has been the progress made in industrial pollution control, and I am especially proud of the progress which has been made by U.S. Steel Corporation and the entire steel industry. The steel industry is controlling 96 percent of its emissions to the air. Control of water pollutants is now over 90 percent and will be at about 96 percent within the next few years. In steelmaking areas air quality and water quality have improved dramatically. Air pollution alerts and fish kills are comparatively rare.

With this much progress behind us, we must now look to the future. With environmental quality high, we must now give greater attention to other environmental problems — unemployment, inflation, decreased productivity, the energy crisis and national security. We are dedicated to continuing environmental progress necessary to meet health-related environmental requirements, but once health needs are met, a balance must be struck between marginal environmental improvements and the attainment of other national economic and social goals. Capital, which is involved in attaining these goals, is limited. There is not enough to go around. Choices must be made, and the mechanisms for making these choices must be developed if we are to remain a strong, secure, and free Nation.

**Michael McCloskey**
Executive Director
The Sierra Club

The most significant achievement lies in the profound change which has taken place in public thinking over the last decade. This underlies changes in public policy and makes them possible. Following 1970, various surveys of public opinion have repeatedly returned to the same questions to test public sentiment, and they have consistently shown majority support for strong environmental programs. A recent survey for Resources for the Future showed 62 percent of the public counting themselves as sympathetic to the movement, with 42 percent of the public favoring environmental protection regardless of the cost. Some 30 percent were neutral, with only 4 percent unsympathetic. Other surveys generally show over half to two-thirds of the public favoring strong programs. Deviations from this norm only occur occasionally in polls that pose extremely tough questions of trade-offs involving jobs or energy availability — questions that usually depart from reality in the starkness of the choices posed.

The general trend in the polls also shows that there are majorities sympathetic to the movement in all income and educational classes. Surprisingly enough, the RFF poll even shows slightly more blacks than whites sympathetic to the movement. This is a profound change from the early 1970's. Over 60 percent of both liberals and conservatives and Democrats and Republicans are sympathetic. In truth, environmentalism has become a central value in the thinking of most Americans.

**John Carlin**
Governor, Kansas

In the last ten years new laws have been implemented to control air pollution and water pollution. Major amendments to the Clean Air Act have required the State to develop regulations that will have a significant impact on air pollution sources. Changes in State law resulted in extensive development of regulations and standards dealing with public water supply systems. Water supplies are also being developed and upgraded under a new incentive by the Kansas Department of Health and Environment. Kansas has been a leader in the Nation in the area of solid and hazardous waste management. Improvements in State regulations during the 1970's have virtually eliminated most solid waste problems and have laid the groundwork to eliminate others. Advances were made in the 1970's to deal with hazardous wastes, but the greatest impact will likely be made in the 1980's.

The largest project of the decade, and the one that would have to be considered the most comprehensive, is the development of the Kansas Water Quality Management Plan. This plan deals with every aspect of water management. All sources of water pollution in the State were addressed. Many studies were made and are still in progress that will be the basis for new regulations and control measures. This document will also be a foundation for an overall environmental plan for Kansas.

**R. O. Anderson**
Chairman of the Board
Atlantic Richfield Company

Over the past ten years, we have witnessed an outpouring of legislation and regulation aimed at protecting and enhancing the human environment—the air we breathe, the water we drink and use for recreation, and the land on which we live and work. These laws and rules evolved from a growing realization and concern that most human activity impacts our environment. I believe this growth of environmental awareness has been the most notable environmental achievement in the last decade.

Even with the increased industrialization during the period, significant progress has been made in checking the rate of environmental degradation and in the reduction of some pollutants. Our streams and rivers are cleaner and our air contains less sulfur dioxide. While the environmental task is not complete, we are headed in the right direction. We have a challenging task in balancing our environmental concerns with the economic vitality that is so necessary to the well-being of our citizens.

**Anthony Mazzocchi**
Director of Health and Safety
Oil, Chemical, and Atomic Workers International Union
AFL-CIO

The greatest achievement is the elevated consciousness and extreme concern over the magnitude of the environmental problems confronting mankind. Linkages are better understood. We see that contaminants at work affect workers, and subsequently the community through diverse pathways. There is an understanding that the toxic grave is not the end, but the beginning of even more devastating damage. We have an awareness that the ultimate insult is now probably the irreversible damage to a yet unborn generation. We understand the fact that cancer and other major diseases, including senility, can be attributed for the most part to the environment and therefore are preventible. This holistic perception that seems to have settled upon the people of our country and increasingly among other populations is to me the single most important environmental event to date because of the possibility there now exists to go from awareness to significant change.

**Gus Speth**
Chairman
President's Council
on Environmental Quality

The most important environmental achievement in the last ten years is that we have demonstrated our national capacity to care and to act. Our environmental protection laws and programs at all levels of government and the private organizations that help make them work are an historic accomplishment and testament to this capacity. As with the civil rights movement and with the women's movement, we have proven again that America can still learn big lessons.

The capacity to care and to act will be put to another great test in the 1980's. Our domestic environmental efforts of the past decade have given us the experience we badly need to face the unprecedented global challenges of population growth, loss of natural resources, and environmental contamination.

**Edward I. Koch**
Mayor, New York City

The greatest environmental accomplishment of the last ten years has been getting people to be conscious of the need to conserve the environment, based on the fact that it is limited and the air does run out and the water does become less available and energy sources do become depleted. People now understand the need for conservation and for the restoration of those sectors of the environment, such as the air, the water, and the land, that have been desecrated. This has created expectations which weren't there before and which, if not realizable as quickly as we would like, nevertheless have become real goals.

**Franklin Wallick**
Co-Chairman, Urban
Environment Conference

The awakening of the American people to the dangers and hazards of the workplace environment is, in my judgment, the outstanding accomplishment of the past environmental decade.

The skills and insights of environmental scientists have made this more than a superficial event. Millions of American working men and women in all kinds of work—in offices, in mines, in factories, in hospitals, and on farms—have come to realize that what they touch, breathe, hear, and see at their workplace affects their lives and their longevity.

Today—except for the Nordic countries of northern Europe—there is no other place in the industrial world besides the U.S.A. where there is more consciousness or more being done to make the workplace safe and healthful.

EPA, OSHA, and the Consumer Product Safety Commission stand as enlightened guardians of health and safety. What they do to carry out the law is often not as important as what they do to raise the level of sensitivity and information — so that people on and off their jobs can grapple with the complexities of their total environment.

We care about their enforcement, and we cherish their insights.

**Coleman A. Young**
Mayor, Detroit

Significant environmental activities over the last decade have been concerned with air, water, solid waste, pesticides, radiation, and noise. However, since Michigan is the focal point of the Great Lakes Basin—having one-fifth of all the fresh water in the Nation, one-fifth of the U.S. population, and one-fourth of U.S. industry—water and pollution control have been priorities here in southeastern Michigan.

The Detroit Water and Sewerage Department is responsible for control and treatment of waste water for over 75 communities of southeastern Michigan, essentially responsible for the protection of public health and for the removing of sources of pollution from the surrounding rivers and streams.

Detroit has the largest single treatment facility in the Nation, and the Detroit River carries one of the Nation's largest flows of water. Its exceptional quality and quantity continues to be an extraordinary asset to the Detroit Metropolitan area.

Since the early 1970's, the water quality has improved dramatically. This achievement has had a major effect on our recreational facilities, especially in the once-polluted waters that are now swimmable and fishable. This significant achievement has played a major role on the Detroit River and in the surrounding Great Lakes.

These improvements are directly attributed to improved sewage treatment processes. As a result, there will be more treatment stages, longer retention of wastes during treatment to improve the removal of pollutants, additional aeration and secondary clarifier capacity, and plant effluent will receive additional chlorination and additional sludge thickening capacity.

It is important to acknowledge the presence of problems when environmental pressures are posing unusual challenges. However, I believe that during the 1980's our technology will have advanced far beyond today's know-how.

We are in the environmental business because it is concerned with the fundamental requirement of everyone's everyday living.

I intend to continue to meet these responsibilities in the decade just beginning.

**David R. Brower**
Chairman and Founder
Friends of the Earth

It is likely that for the first time in the Earth's history natural hazards to humanity have slipped into second place, and within the past ten years have been topped by hazards of our own invention. It was not enough to have to cope with avalanche, coastal erosion, drought, earthquake, flood, frost, glaciers, hail, hurricane, landslide, lightning, pestilence, tornado, tsunami, volcanic eruption, and wildfire. With a strange determination to achieve a quicker life through chemistry, human beings have devised substances with which the environment itself cannot cope, which have become toxic bread cast upon the waters, not fit for human use when it returns. We have denied ourselves the chance to say "as right as rain" because of the acids and toxic metals we have added to the cloud's burden and to the aquifer's, too. Finding background radiation not hazardous enough, we have found uncontrolled ways to augment it and to top that off with genetic engineering and the Pentagon computer!

Not yet content, we have made substantial progress toward blocking our own best efforts to correct our errors. We opened the decade with a National Environmental Policy Act, an Environmental Protection Agency, and a Council on Environmental Quality—moves that were exemplary in the global view. We proceeded through the decade trying in various ways to disassemble this achievement. Realizing that the way a society governs itself is through coercion willingly accepted (laws and regulations), rather than waiting until voluntary good will takes effect universally, we wrote good laws and regulations, and then went to Madison Avenue to have them tried and executed — in the gas chamber of media saturation.

The good news for the 1980's is that people are the best bet for correcting problems they have created. There is still an opportunity to reduce the tension those problems are creating. The Global 2000 Report points to the dire need. But it is not an opportunity that will last much longer.

**Jerry Wurf**
International President
American Federation of State, County, and Municipal Employees

I believe the Occupational Safety and Health Act of 1970 contains a provision that represents an important environmental gain for public employees. The OSHA Act itself, which established a worker's right to a safe and healthy workplace for the first time, specifically excluded public employees. But it also included a provision that lowered this onerous double standard, allowing States to establish their own occupational safety and health programs. Three years ago, the Department of Labor took another progressive step in this direction when it issued rules giving States the option of establishing OSHA plans for public employees only, where State plans did not exist.

Two-thirds of the one milion public employees AFSCME represents are covered by such plans in 16 of the 21 States that have them. The importance of these progressive environmental rules to public employees can be gauged in several ways. First, State and local employees represented more than 14 percent of the total work force in 1975, a 33 percent increase since 1965. Second, the number of State and local employees increased more than 50 percent between 1965 and 1975, from 7.7 million to 12 milion workers. Finally, AFSCME's growth has doubled from a half-million to 1.2 million since 1972.

With the growth of public employment, particularly at the State and local level, these workers are increasingly exposed to many of the same occupational and environmental hazards as private sector employees (and some others that the latter are not). Public employees are the victims of accidents three times as frequently as private employees, and their injuries are twice as severe.

Today, when productivity is on the lips of public employers across the country, an undertone of hostility is discernible: improving workplace conditions is seldom mentioned as a central factor in getting more for the public's money. A costly indulgence? Only if you make the victims of paltry innovation the culprits of industrial obsolescence. Such myopia is what threatens the environmental victories won by workers in the 1970's.

The provisions under the OSHA Act pertaining to public employees begin to address a problem shared by all workers: making employers — whether public or private — realize that a safe and healthy workplace is a human right.

**John J. O'Leary, Jr.**
Mayor, Portland, Maine

It was Portland's deep protected inner harbor and its closeness which in 1623 brought our first European settlers to the "Neck" or "Falmouth Neck" as it was then called. When Portland was incorporated as a city in 1832, most of its population of 13,000 was clustered along the 22.45 miles of tidal water frontage, the hub of the city's commerce and industry. As the city entered the mid-19th century, it gained preeminence as one of the country's leading seaports.

There is little wonder why I, as Mayor of the city of Portland, Maine, when asked what was the greatest achievement in the city in the last 10 years, would answer 'cleaner water, of course.'

In 1965 the city financed its first comprehensive wastewater planning study which recommended interception and treatment. Since passage of Public Law 92-500 in 1972, with financial assistance from EPA and the State of Maine, the Portland Water District, our regional treatment authority, has constructed most of the planned system with only Phase III, a project to service the Stroudwater Area, still awaiting funding.

The first two phases included the treatment plant, six pumping stations, and interceptors along Back Cove, the Fore River, and the Presumpscot Estuary with a total construction cost of about $55 million with 75 percent of the eligible cost assumed by EPA, 15 percent by the Maine Department of Environmental Protection and 10 percent by the local community.

On June 14, 1980, only nine months after the dedication of the new treatment plant, our citizens realized their first real benefits of this treatment system which was not only expensive to build, but also expensive to operate and maintain through the required user charge system. This was the date on which we were able to reopen our East End Bathing Beach which had been closed for 16 years due to the deteriorated water quality.

Our deep protected and once again clean inner harbor is our most valuable natural resource, and our future is as dependent on it as our history has been.

**David C. Treen**
Governor, Louisiana

I believe the raising of the consciousness of both the public and elected officials to the need for protecting the environment and the renewable resource values of our ecology is the most significant environmental accomplishment of the past decade.

**Howard D. Samuel**
President
Industrial Union Department
AFL-CIO

From the point of view of the industrial worker, the most notable environmental achievement of this past decade is the Toxic Substances Control Act(TSCA), passed in 1976 in large part through the efforts of a coalition of labor and environmental groups.

This law marked the first legislative attempt to attack environmental problems at their source. The strategy was to control chemicals before they enter the manufacturing process and contaminate the environment. Before TSCA environmental efforts were geared to treating symptoms—as was the case with air pollution, water pollution, and hazardous wastes.

By stimulating pre-market testing and notification of chemicals, TSCA slowly is forcing companies to manufacture chemicals that pose fewer risks to workers. In effect, this legislation has become a tool for dealing with the chemical revolution. The bill also has had the effect of directing foreign governments and companies to look at their own toxic chemicals.

There are already 55,000 chemicals in commercial production or use, with hundreds more added each year. The concern of the Industrial Union Department is to protect those workers who are exposed to them. While the struggle to achieve workplaces free from safety and health hazards is far from over, we're moving forward step by step, as evidenced by TSCA.

**Victor Atiyeh**
Governor, Oregon

The environmental achievement of significance in the 1970's was the realization by both lawmakers and citizens that we have been squandering our limited air, water, land, and energy resources and that we have to do something about it. Environmental goals that the United States has today were built upon a solid foundation in the past decade. Without being self-righteous, Oregonians like to point out that much major national environmental legislation was patterned after laws crafted in Oregon during the middle 1960's. Oregon's early experience with environmental laws demonstrated that, with reason and common sense, environmental improvements can result without major economic problems.

The emphasis in our State has been on public support

through understanding of need. When Oregonians are shown there is a serious problem to solve that affects the quality of their lives, they will constructively respond. As a result, Oregon has been able to put into effect statewide land use planning, return deposits on bottles and cans, public ownership of beaches, a mandatory vehicle inspection program, strict controls on hazardous wastes (including operation of chemical disposal sites) and on chemicals such as PCB's and certain spray propellants, and early investments by industry to clean up their discharges.

The Oregon approach has worked well to cause real environmental improvements in the past decade. The air is cleaner, a major river has been restored, roadsides are cleaner, and wastes are being treated as they should. The challenge of the future is to maintain support for these gains through sensible, sensitive administration and lawmaking.

**Bobby L. Chain**
Mayor
Hattiesburg, Mississippi

The city of Hattiesburg, Miss., has seen during the last 10 years significant environmental achievement while meeting the increasing needs of a growing urban area. The most important achievement, I believe, in our city is the fact that our people now realize the importance of protecting the environment around us. This spirit of protecting our environment exists even though the measures required are almost always costly and cause significant sacrifices on the part of our people for that protection. Cooperation such as we realize in Hattiesburg normally allows us as city officials to enforce violations, to achieve the best technological solutions to our problem areas, and to plan our future with our environment in the forefront.

I believe this spirit has grown from seeing the mass destruction of the environment in other urban areas and growing confidence that the environmental protection agencies, local, Federal, and State, are moving to a more common sense approach to resolve and to prevent these problems. It is my sincere wish, now that our people are cooperating, that we, as elected and appointed officials in this country, will continue to develop our technology in a common sense manner to reduce the cost involved and to achieve as nearly as possible, complete environmental protection.

**William S. Sneath**
Chairman of the Board
Union Carbide Corporation

Perhaps the most significant environmental achievement of the last decade has been the commitment of American industry to the cleanup of our waterways. Ninety percent of industry met the 1972 Water Act's "best practicable technology" provision while less than half of our cities and smaller municipalities met this goal.

By 1979 the member companies of the Chemical Manufacturers Association (CMA) had invested $3.7 billion to control water pollution. And, while these costs have been significant, no one can argue that they were not worthwhile.

Technology proved responsive to the intent of the law which was designed to meet urgent and feasible goals. And, without arguing the fine points, one can hold similar expectations for the Resource Conservation and Recovery Act (RCRA).

The legislative and regulatory framework which has evolved in the environmental area during the last decade is unprecedented. Never before have such sweeping changes occurred in such a short period of time, with such visible results. □

*Hikers atop West Virginia's Spruce Knob survey the surrounding valleys of the Allegheny Mountains.*

*Back cover: The winner of the EPA Region 6 Earth Day 1980 poster contest by third grader Angela Mitchell of the David Crockett Elementary School in Dallas, Tex.*

United States
Environmental Protection
Agency
Washington D C 20460

Official Business
Penalty for Private Use $300

Postage and
Fees Paid
Environmental
Protection
Agency
EPA 335

Third Class
Bulk


Return this page if a change of address is needed ( ), list change, including zip code.