

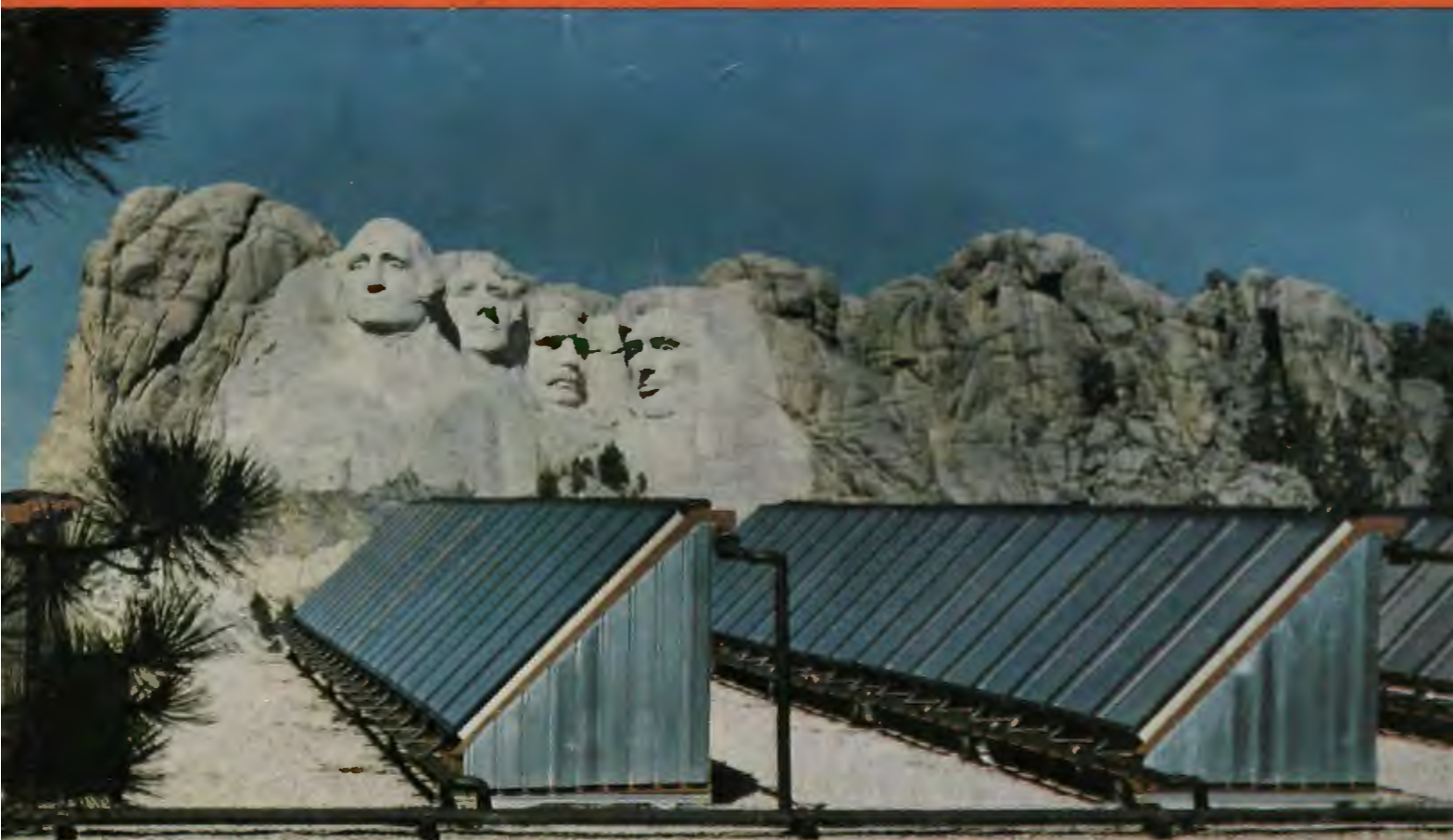
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# EPA JOURNAL

## The Federal Effort





## The Federal Role

**W**hile EPA has the lead in national governmental activities to safeguard and restore the Nation's environment, this issue of the Journal recognizes the major contributions made by the many other Federal agencies in this effort.

Although Federal regulation is now under often fierce attack by some industry groups, both Douglas Costle, EPA Administrator, and Gus Speth, Chairman of the Council on Environmental Quality, argue that while regulation may need improvement and pruning, it still serves a vital purpose. Public support for regulation to protect people from the Three Mile Island, Love Canal, and Kepone hazards is not expected to wane.

This issue is a follow-up to the May, 1979, EPA Journal which reported on the vital role played by the States and local governments in environmental protection.

On the Federal front, actions to allow needed energy development while controlling pollution are explained by EPA Deputy Administrator Barbara Blum. The same challenge is discussed from a different perspective by Secretary of Energy Charles Duncan.

Two legislators, Senator John Chafee (R-R.I.) and U.S. Representative James Florio (D-N.J.), write about major Federal needs to help protect public health and our natural environment.

Chafee proposes changes in the landmark Clean Water Act to help make it more effective and Florio reports on the drive to establish a superfund to finance cleanup of hazardous wastes.

A bird's eye view of the status of the overall Federal effort in the environmental area is presented in a special fact sheet.

The activities of three Federal agencies with major environmental responsibilities are

reviewed. Included are articles on the Agriculture Department, by Assistant Secretary Rupert Cutler; Interior, by Secretary Cecil Andrus; and the Agency for International Development, by Administrator Douglas Bennett Jr. Some lesser known environmental activities in other major Federal agencies are explained in another article.

Cooperative environmental efforts among Federal agencies are illustrated by a report on a joint study of the movement of polluted air in the Northeastern United States.

On another front, Colorado Gov. Richard Lamm discusses the citizen role in environmental leadership.

Finally, the growing dangers to the world's population caused by environmental degradation are reviewed in an article about the recently released Global 2000 Study. □



# EPA JOURNAL

**Douglas M. Costle**, Administrator  
**Joan Martin Nicholson**, Director, Office of Public Awareness  
**Charles D. Pierce**, Editor  
**Truman Temple**, Associate Editor  
**John Heritage**, Managing Editor  
**Chris Perham**, Assistant Editor

## Articles

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.

### Efficiency and Compassion: Regulatory Reform 2

EPA Administrator Douglas Costle discusses the effort to ensure efficient, effective Federal regulations.

### Coal and Ecology 4

Deputy EPA Administrator Barbara Blum explains how key fuel resources can be developed while safeguarding the environment.

### Global Danger Signals 6

The world resource predictions of the recent Global 2000 Study.

### Fine-Tuning Construction Grants for the Eighties 8

Senator John H. Chafee proposes some changes in the Nation's water cleanup program.

### Superfund: Solving the Problem Without Regulation 10

An approach to some of the most critical hazardous waste problems is outlined by Congressman James J. Florio.

### The Need for Federal Involvement 12

An interview with Gus Speth, the Chairman of the President's Council on Environmental Quality.

### Interior and the Environment 15

This Department's environmental actions are reported by Secretary of the Interior Cecil Andrus.

### Energy and the Environment 18

Secretary of Energy Charles W. Duncan Jr. explores these issues.

### Aiding the Overseas Environment 20

U.S. efforts to help protect the environments of other countries are discussed by Douglas J. Bennet, Jr. AID Administrator.

### Highlights of the Federal Environmental Effort 23

A Fact Sheet on cost benefits, progress, and programs in the Federal role.

### Conservation Rediscovered 25

Stewardship measures in the Department of Agriculture are explained by Assistant Secretary M. Rupert Cutler.

### Key Federal Agencies 28

A report on the environmental responsibilities of some major Federal departments and agencies.

### Tracking Pollution Plumes 32

A report on a major project to track polluted air across the northeastern U.S. and into Canada.

### Environmental Initiative 36

A strategy for environmental progress is outlined by Richard D. Lamm, Governor of Colorado.

## Departments

### Update 30

### Around the Nation 34

Photo credits: Bruce Carhart; Allan Franks, Ohio EPA; Richard Frear, National Park Service; High Country Images; U.N. Environment Program; Jane Russo; Carl Purcell,

### People 38

### News Briefs 39

AID; U.S. Forest Service; Yutaka Nagata, Chen Jr.—United Nations; E.P. Haddon, Robert Bridges, Rex Gary Schmidt—U.S. Fish and Wildlife Service; William Thach; Charles Geer; Association of American Railroads; Solar Energy Research Institute.

### Almanac 40

Design Credits: Robert Flanagan, Donna Kazaniwsky and Ron Farrah.

**Front Cover:** The House of Great Peaks, a sculpture in mountain rock, looms over water cascades at Mount Rushmore National Memorial in Black Hills, South Dakota. The road-top collector's provide energy for speed-heating and cooling in the visitors' center at the Memorial where tourists can see symbols of both the Nation's history and a safe and environmentally balanced technology. (Articles on p. 4 and p. 10)

**Opposite:** Skiers in Mount McKinley National Park in south central Alaska. The 20,320-foot peak known locally as Denali is the highest in North America. (Articles on p. 12 and p. 10)

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## Efficiency and Compassion: Regulatory Reform

By Douglas M. Costle  
*EPA Administrator*

In the best "once upon-a-time" tradition, let me begin with a few stories:

- The public library in Rudd, Iowa, was nearly forced—in conformity with Federal regulation—to install ramps for handicapped persons. It was exempted from the rule when it was learned that the cost of building the ramps would almost equal the library's annual budget—and that not a single handicapped person lived in Rudd.
- An unregulated trucker can haul railroad ties if they are cut from logs that were sawn crosswise; if the logs were sawn lengthwise, however, the trucker must get a certificate from the Interstate Commerce Commission. Similarly, he can haul riding horses to be used for personal pleasure, but not race horses; whole wheat, but not wheat germ; and parrot food, but not hamster or gerbil food.
- Hospitals in Baltimore are required by Federal regulations to keep the water in patients' rooms at 110 degrees or less; they are required by city law to keep the water at 110 degrees or more.
- A meat-packing plant was told by one Federal agency to wash its floors several

times a day for cleanliness . . . and was told by another Federal agency to keep its floors dry, so that employees wouldn't slip and fall down.

This sort of story shows up regularly in the newspapers and on television. If such anecdotes were rare, they might merely amuse us—as reminders of our common, human fallibility. But they are not rare; they have become frequent enough to arouse resentment, and a demand for reform.

The Federal Government today has regulatory offices—most of them in the Executive branch, but 18 of them in independent regulatory commissions. These offices issue a total of 7,000 rules of various kinds a year. About 2,000 of those rules have a significant impact on State and local governments or private industry, and about 100 have major economic impacts.

The cost of these regulations is disputed. It's estimated that Federal environmental rules alone impose direct costs of nearly \$20 billion a year; State and local



environmental rules impose even more. A 1979 study by the Business Roundtable of Federal regulation on 48 large companies placed regulatory costs on them at \$2.6 billion. Nobody really knows the total cost of Federal regulation, nor the benefits that should be deducted from the overall figure. I've seen estimates ranging between \$50 and \$150 billion a year. Whichever figure is nearer the mark, Federal regulation costs a lot of money.

Now let me tell you a different kind of story about Federal regulation:

- In 1933, bank-failures ran at the rate of 40 percent; since then, because of Federal requirements, the failure-rate has dropped to less than one percent—and not a single depositor has lost a cent in the failure of a Federally insured bank.
- The Federal safety standard for infants' cribs became effective in 1974; since then, crib deaths by strangulation have fallen by half, and injuries by 45 percent.
- According to the General Accounting Office, Federal regulations for motor vehicle safety—seat belts, interior padding, and stronger doors—saved 28,000 lives between 1966 and 1974. That figure does not include lives saved by lowering the speed limit in response to the energy situation.

These two categories of stories capture, it seems to me, the essential difficulty inherent in our current demand for regulatory reform. On the one hand, evidence shows that some Federal regulations are silly, that they impose cost without adding any compensatory benefit, and that they ought to be thrown out. On the other hand, evidence shows us that some Federal regulations control individual and corporate behavior in socially beneficial ways that the market cannot, that they are saving lives, and that they must be retained.

President Carter recognized both the benefits and shortcomings of Federal regulation in a message to the Congress April, 1979. Much of it, he said, "is vitally important to modern society. Goals such as equal opportunity, a healthy environment, a safe workplace, and a competitive and truthful marketplace cannot be achieved through market forces alone."

Further on in the same message, however, he said that the overall regulatory system has become "burdensome and unwieldy."

"Our society's resources are vast," he continued, "but they are not infinite. Americans are willing to spend a fair share of these resources to achieve social goals through regulation. Their support falls away, however, when they see needless rules, excessive costs, and duplicative paperwork. If we are to continue our progress, we must ensure that regulation gives Americans their money's worth."

Those measures are already showing results. Among the specific improvements that might be cited are these:

- Airline deregulation saved travelers \$2.5 billion in the first year alone; reduced fares attracted more customers and boosted airline profits.
- EPA regulations lowering the level of water-pollution control on hundreds of industries that do not discharge toxic pollutants will save about \$200 million in control costs—with no loss in water quality. Our "bubble" policy, which allows plant managers to choose the most economical control strategy for air emissions, will permit savings of 25 percent; and one electric utility in Tampa reports that the "bubble" approach cut the cost of controlling sulfur-oxide emissions by \$20 million.
- According to Labor Department estimates, the cotton-dust standard adopted by this Administration has a capital cost \$2.1 billion below the original Ford Administration proposal. As a result of intensive analysis by the Occupational Safety and Health Administration and the President's Regulatory Analysis Review Group, the cost of a regulation to control acrylonitrile—a chemical used to produce resin, rubber, and other products—was reduced by \$100 million below the original proposal.
- Elimination of unnecessary regulation and reduction of paperwork has also resulted from the President's reforms:
- The Safety and Health Administration has cut out 1,000 standards that did not contribute to worker safety, and exempted 40,000 low-risk businesses from annual reporting requirements.
- EPA has speeded up average processing time for rural water-treatment applications by more than a year—saving local governments several hundred million dollars annually.

Finally, by making regulation easier to understand, Federal agencies believe they can encourage voluntary compliance and reduce the need for enforcement. My personal favorite in this category is the following regulation from the FCC:

"Except as provided in paragraph B of this section, applications, amendments thereto, and related statements of fact required by the Commission shall be personally signed by the applicant, if the applicant is an individual." The new version, translated into plain English, reads as follows: "If you are an individual, you must sign the application personally."

In all these ways, the reforms mandated by the President are saving billions of dollars, millions of hours, and heaven only

knows how many ulcers. But because regulatory programs are created by Congress, comprehensive, permanent reform requires new legislation approved by Congress.

Hence the President has submitted a proposal known as the Regulation Reform Act of 1979. In addition to making permanent the improvements already initiated by the President within the Executive Branch, it would extend them to the independent agencies.

Simply stated, President Carter's reforms emphasize three main goals: to get rid of bad regulations, to save the good, and to improve Federal management of the regulatory process. This is an important goal, and a worthwhile one. Precisely because it is so popular, however, we can oversimplify the complexity of regulatory reform and demand hasty action where thoughtful analysis is needed.

It is both fashionable and easy to say that Big Government creates Big Regulation . . . that bureaucrats write new rules to keep themselves in business. I must admit I have occasionally run into a Federal employee who seems to have an ideological repugnance to business, and an evangelical zeal to regulate it.

But this is generally not true. The much larger fact is that a Big Society has spawned a thousand problems that the Founding Fathers could not dream of. In the last 20 years, we have come through an era of legislation unprecedented in scope, variety, and quantity. Congress has passed law after law which the Executive Branch is required to administer . . . and even though each may make sense in itself, the accretion of these laws slowly builds a cumulative burden that can interfere with business without bestowing any compensatory benefit on society.

We have to sort out our rules, not throw them out. We must safeguard vital social goals, yes and President Carter's reforms do not retreat from any of them.

But we must also get rid of rules that needlessly discriminate between gerbil food and parrot food, between crosswise logs and lengthwise logs; we must restore competition to healthy, mature industries that do not need regulations passed in a time of monopoly 75 to 100 years ago; we must enable American business to devote its energies to production—not of forms and data, but of goods, services, jobs, and national economic health; and we must make American government use its delegated powers with efficiency as well as compassion.

Reform of regulatory operation, not retreat from national goals: this is the course that President Carter has set, and it has already proved its value. □

# Coal and Ecology

By Barbara Blum  
EPA Deputy Administrator

In a sense, we are all hostages—bound by our dangerous dependence upon that long, thin line of oil tankers stretching from the Persian Gulf halfway across the world. As a result, America is paying a heavy price—not only in terms of the \$95 billion we will pay for imported oil this year, but also in terms of added inflation, weakening of the dollar and public insecurity about the future.

Will we as a Nation face up to the growing energy crisis? And will we, working together, respond in a way that will assure energy security, protection of the environment and a renewed sense of public confidence in the future?

This is the challenge we face.

Recognizing all of this from the moment he took office, President Carter was determined to chart a sound course of action for the Nation. And he did just this.

In the very short term, conservation remains the best route to an early reduction of oil imports. That's why President Carter has made conservation this Administration's first energy priority. Over the longer term, development of new sources of energy like syntuels and solar can make the critical difference. That's why, as only one example, the President set a goal of obtaining 20 percent of our energy from the sun and other renewable resources by the year 2000.

But meanwhile, any way you look at it, America's hope for energy relief rests heavily on coal. With one-third of the world's coal reserves lying beneath American soil, this should come as no surprise to anyone.

President Carter's energy policy recognizes that, at this point, it is coal that will put the Nation on the road to energy self-sufficiency. And to make it a reality, the Administration's program provides incentives for increased production and use. Not the least of these by any means is the newest initiative—a \$10 billion, 10-year program to hasten the day when electricity generating plants switch from oil or gas to coal.

The policy of the Carter Administration is to burn three times more coal by the year

1995. But it is more than that. It also is to burn coal cleanly.

Neither the President, nor anyone else in this Administration, is under any illusion about the difficulty of holding to that pledge. But we believe the goal is well worth the effort and that the spirit and substance of the law reinforces our approach.

Today, the fact is that coal can be burned as cleanly as most oil. And at today's oil prices, it can be burned more cheaply than imported oil, *even* with the costs of pollution control factored in the equation.

To help make it happen, EPA has expedited approval of new coal-fired utility plants. By insisting on stringent pollution controls and speeding up the review process, EPA has been able to give the go-ahead to virtually every application we have considered. As a result, America's utilities soon will be burning 25 percent more coal in a way that does not jeopardize public health or the environment.

The benefits of this kind of action are best reflected in a decision we made last year. By allowing the first major power plant in the Northeast to convert to coal, we have reduced our dependence on foreign oil used for generation of electricity by 14 percent. The Brayton Point Plant, located in Somerset, Mass., is making the transition now. It is the largest power plant in the Nation to do so.

We are putting \$41 million of the Agency's research budget into the search for new pollution control techniques for coal.

EPA is taking a hard look at its regulations, too. A major factor, for example, in our power plant standard was to accept the promise of dry scrubbing, a new technology, because it would allow maximum use of low-sulfur coal at a reasonable cost. Equally important, the standard also gives credit for the sulfur removed by coal-washing. In other words, the more effective the washing technique, the less the investment required for stack controls.

We're concerned about unnecessary delay companies may encounter in obtaining pollution control permits. We've proposed to speed up and simplify the process

—not only under the Clean Air Act, but under the Clean Water Act and other laws as well. Already, EPA has named a single point of contact in each of our 10 Regional Offices to coordinate the work, according to strict, self-imposed deadlines.

Finally, we're working closely with the Department of the Interior to sort out problems associated with surface mining. Under terms of an agreement recently signed, the process by which EPA reviews surface mining regulations of Interior and the States will be speeded up. Under terms of another agreement in the works, Interior's Office of Surface Mining soon will issue one permit—addressing their concerns *and* EPA's. Other joint efforts are underway.

That, very briefly, sums up the coal story so far. The question is where we go from here.

The answer, as I said, bears on our willingness to work together toward a common purpose, helping to solve this Nation's energy crisis. In the days and months ahead, nowhere will this become more important than in resolving an issue that is just now emerging.

That issue is acid rain, the complex phenomenon that could become the leading environmental concern of the next decade, especially as worldwide energy trends emphasize the use of more and more coal.

While no one has a full understanding of acid rain and its effects, we know enough to know that there is legitimate cause for concern.

In announcing his new proposal to encourage coal conversions, President Carter said it this way:

"One major issue has not been resolved—the problem of increased air pollution loadings and increases in acid rain that will result from these coal conversions. We have recently come to understand that sulfur dioxide and nitrogen dioxide emissions from power plants travel great distances and are a principal cause of acid rain. I am becoming increasingly concerned about the problem. . . ."

Acid rain can wipe out fish life as it has done in the Adirondack Mountains in the

State of New York. It can cause stone or masonry structure to decay. There is mounting evidence—based on field research—that it can damage crops, soil and probably forests as well.

And there are some disturbing signs that the problem may be getting worse.

In the mid-50's, for example, the only places showing elevated levels of acidity were in the Northeast. Today, there are high levels throughout the Eastern half of our country and even reports of high acidity in the Hawaiian Islands. We are finding that the fish in some lakes in Northern Minnesota and Southern Ontario already contain higher levels of mercury than is safe for human consumption. Then there's the increased presence of heavy metals in the drinking water of small communities that do not treat their water supply. Finally, there's the matter of preliminary calculations by the Canadian Government. These indicate that lakes in that country have been damaged by acid rain, much of it thought to stem from power plants and other sources in the United States.

There is no question that President Carter wants this problem dealt with. He launched a massive Federal program to study how acid rain works and what effects it has on human health and the environment. Recently, he called on Congress to begin hearings on the matter as soon as possible. Hearings held thus far have been a major step toward focusing national attention on the problem and its solution. The President has asked EPA to accelerate our work on acid rain and to begin immediately to work with Congress on a comprehensive way to improve the situation as a whole—not simply to prevent it from worsening.

The problem of acid rain in other words, appears to be a serious one. And, as President Carter has recognized, it will take a serious effort by all of us to deal with it.

More than three and a half years ago when President Carter took office, he insisted that a rigid agency-by-agency approach to conducting the Nation's business would only compound past mistakes. Efforts to work together, the President said,

are vital, especially with so grave a matter as the energy crisis.

This cooperation, the President said, cannot be limited to government agencies, if it is to succeed. A partnership among all components of our society—government, the general public, academia and industry—will be needed if energy independence is to become a reality.

Nowhere is this more true than with the coal industry and government agencies like EPA which foster environmental protection. At our fingertips, we have the tools to convince a skeptical American public that vast quantities of American coal can

be burned cleanly and at less cost, thereby meeting a full range of national needs now.

This Administration's energy policy provides the framework and the incentives. The technology is available. And there's a resource, an American resource, of workers ready to mine that coal.

It's up to all of us, working together, to make it happen. It is a challenge I—and President Carter—believe we can meet. □

*This article is excerpted from a speech by Barbara Blum to the Mining and Reclamation Council in Washington, D.C.*



Coal being hauled by train.





Fishermen (Buenos Aires, Argentina) Pull Net Off Coastal Vessel

## Global Danger Signals

By Taiman Taiman

**T**he long-awaited Global 2000 Study has warned of "the potential for global problems of alarming proportions" within the next 20 years unless changes in public policy are made in many countries.

"Environmental, resource, and population stresses are intensifying and will increasingly determine the quality of human

life on our planet," the report declared. "These stresses are already severe enough to deny many millions of people basic needs for food, shelter, health, and jobs, or any hope for betterment. At the same time, the earth's carrying capacity—the ability of biological systems to provide resources for human needs—is eroding." The trends reflected in the massive, three-year study, which was made public recently, suggest strongly a progressive degradation and impoverishment of the earth's resources.

The report managed to find some evidence for cautious hope in the international scene. Its projections were based on the assumption that national policies dealing with population, resource conservation and environmental protection would remain

basically unchanged for the next 20 years.

"But, in fact, policies are beginning to change," the authors noted. "In some areas, forests are being replanted after cutting. Some nations are taking steps to reduce soil losses and desertification. Interest in energy conservation is growing, and large sums are being invested in exploring alternatives to petroleum dependence. The need for family planning is slowly becoming better understood. Water supplies are being improved and waste treatment systems built." The study also pointed out that high-yield seeds for crops are widely available, and in some areas conservationists have taken steps to protect wildlands whose genetic resources of plants and animals otherwise would be





endangered. Also, a number of farmers are substituting selective pesticides and making use of natural predators in place of persistent pesticides that often kill species not targeted by the user.

The study was signed by Gus Speth, Chairman of the Council on Environmental Quality, and Thomas R. Pickering, Assistant Secretary, Oceans and International Environmental and Scientific Affairs, Department of State.

As a result of the report, President Carter announced that he was setting up a Task Force on Global Resources and the Environment with Speth as Chairman, to assure that high priority attention is given to the global problems mentioned. The Task Force will consult with EPA and

numerous other agencies in making future recommendations.

The Global 2000 Study started out with a request by President Carter in his Environmental Message to Congress in 1977 for a one-year study by the Council on Environmental Quality and the Department of State, in cooperation with the Environmental Protection Agency, National Science Foundation, National Oceanic and Atmospheric Administration, and "other appropriate agencies."

But it soon became obvious that the task would take more time. Over a dozen Federal agencies contributed sections to the three-volume report, which posed formidable clearance procedures. In addition, it was the first U.S. Government effort to look at the issues of population, resources, and environment from a long-term global perspective recognizing their interrelationships and attempting to make connections among them.

What the study found was very gloomy news in a number of sectors. Rapid growth in world population will continue, with the total increasing from four billion in 1975 to more than 6.3 billion in 2000. The rate of growth is predicted to slow down only from 1.8 percent annually to 1.7 percent. Even more alarming, 90 percent of the growth will occur in the poorest countries.

At the same time, world food production is expected to increase 90 percent between 1970 and 2000. However, because of surging population, the per capita increase will be less than 15 percent. Moreover, the bulk of the increase will go to countries that already have relatively high per capita food consumption. The consumption per person in such food-scarce regions as South Asia, the Middle East, and Africa will barely improve or in fact will decline, the report warned. At the same time, real prices for food are expected to double.

Most of the rise in food production must come from greater yields per acre, since the total of land fit for cultivation will only increase four percent by 2000, the study estimated. A major reason why food prices will soar during the years ahead is that most elements that now produce higher yields, such as fertilizer, pesticides, fuel for tractors and power for irrigation, depend heavily on oil and gas.

Some of the study's conclusions had already been predicted by other specialists in industry, science, and government and came as no great surprise. Warnings about population stresses on world resources, such as overfishing, deforestation, overgrazing and soil erosion had been voiced for years by such authorities as Lester Brown, President of Worldwatch Institute (EPA Journal, June, 1978 and December, 1979). Nor was it news that less developed countries will have increasing difficulty meeting their energy needs. Already conservationists are voicing concern about the

rate at which impoverished countries are causing floods and erosion by excessive cutting of trees for firewood. The authors of the study think that needs for fuelwood will exceed supplies by about 25 percent before the turn of the century.

What of the world's other fuel resources, such as coal, gas, oil shale, tar sands, and uranium? The report noted that they are "theoretically sufficient for centuries," but are not evenly distributed. They also pose economic and environmental problems.

"Despite recent progress in reducing various types of air pollution in many industrialized countries," the authors said, "air quality there is likely to worsen as increased amounts of fossil fuels, especially coal, are burned. Emissions of sulfur and nitrogen oxides are particularly troubling because they can combine with water vapor in the atmosphere to form acid rain or produce other acid deposition." The study cited Norway, Sweden, southern Canada, and the eastern United States as examples of where acid rain had become a problem. Fish have been disappearing in many lakes in these countries, and in the last two decades, "first salmon and then trout disappeared in many Norwegian rivers as acidity increased," the report noted.

In addition, the increasing use of fossil fuels has resulted in rising concentrations of carbon dioxide in the earth's atmosphere. Scientists differ on the possible consequences, but a widely held view is that within the next 70 years this could seriously disrupt world agriculture, according to the study. Carbon dioxide has increased about 15 percent in the last hundred years and is expected by the year 2000 to be a third higher than it was before the Industrial Revolution began in the 18th century. If the burning of fossil fuels such as coal and oil continues to show the same rate of increase, the amount of this pollutant in the atmosphere is expected to double after the year 2050.

"The result could be a two to three degree Celsius (about 3.5 to 5.5 degrees F.) rise in temperatures in the middle latitudes of the earth," the report declared, "and significant alterations of rainfall patterns around the world. Agriculture and other human endeavors would have great difficulty in adapting to such rapid, dramatic changes in climate. Even a one-degree C. increase in average global temperatures would make the earth's climate warmer than it has been any time in the last 1,000 years."

The study repeated earlier warnings that the stratospheric ozone layer, which protects the earth from damaging ultraviolet light, is being threatened by chlorofluorocarbon emissions from aerosol cans and other sources (EPA Journal, February, 1979). It also noted that the problem of

*Continued to inside back cover*



# Fine-Tuning Construction Grants for the Eighties

By Senator John H. Chafee,  
(R-R.I.)

**J**ust 10 years ago, Lake Erie was so choked with algae that its beaches were closed, and fish could not survive its waters. The Cuyahoga River was so polluted that it caught fire.

Both these bodies of water are now surrounded by blossoming parks and clean beaches, being enjoyed by human and animal life alike.

The rejuvenation of these and other waters throughout the country is largely due to the Clean Water Act, originally enacted in 1972 and amended in 1977.

Though great progress has been made, there is much more that must be accomplished to achieve the Act's goal of fishable and swimmable waters in the 1980's.

One change that is inevitable, in order to achieve that goal, is to reform and fine-tune the construction grants program. The largest non-military public works program since the Interstate Highway System, the construction grants program has authorized \$44 billion for 17,000 projects nationwide since 1972.

Yet for all its expenditures and all its successes, the construction grants program has been plagued with monumental costs and delays in Federal funding. We in Congress are going to review the Clean Water Act, possibly beginning with hearings this year and continuing into next spring. As a crucial part of the Clean Water Act that will undergo this review, the construction grants program—its accomplishments and its shortcomings—deserves more than cursory examination.

Under the construction grants program, municipalities may receive Federal aid to construct wastewater treatment facilities to meet the Act's requirements. The Federal grants are available for up to 75 percent of total project costs or up to 85 percent where innovative or alternative technologies, such as recycling, will be used. As amended in 1977, the Clean Water Act now awards these grants under a complex formula based on need and population.

Since 1972, we have made considerable progress under this program. Some 1,862 new sewage treatment plants worth \$2.1 billion have been built with the construc-





tion grants. Planning grants totaling \$589 million and design grants totaling \$456 million have been awarded.

But many of the environment's glowing success stories—fish in Connecticut's Willimantic River and shad in the Delaware River—have been primarily authored by industry, while municipalities are behind in compliance.

About 85 percent of the country's major industry polluters are now complying with the law. U.S. businesses have spent an estimated \$21.5 billion in water cleanup equipment since 1972. Yet more than half of the Nation's 20,000 municipalities are not yet in compliance with the Clean Water Act's 1977 deadline for sewage treatment levels.

Our large older urban areas present a particularly difficult challenge. Their plants are often of early to mid-1900's vintage. The fact that many of these cities, such as Memphis and Providence, are located next to valuable water bodies means that their problems must be addressed.

Yet we have an allotment formula which fails to do this. It is a formula which gives credence to collector sewers, as well as more critical needs. Some of our large cities have yet to meet secondary treatment: A requirement they should have met by 1977.

Along with the struggle to meet secondary treatment standards, our older cities face the enormous problems of combined sanitary and storm sewers. To separate these sewers would entail costs more likely to approach our defense budget. But there are methods to treat overflows from these combined sewers, and the allotment formula should give a sufficient boost to these efforts.

There is universal agreement that the construction grants program, which EPA Administrator Douglas Costle says is "on the brink of major progress," is in need of reform. Those reforms must be made in several different areas of the program.

Project cost overruns, certainly a major shortcoming of the system, have been compounded by soaring costs due to inflation. Just between 1976 and 1978, inflation caused a \$13 billion increase in cost estimates for construction projects. With zero inflation and no changes in current requirements, many States estimated that at current funding levels, it would take 50 years to complete the mandated cleanup process. Cost overruns and inflation boost those figures to phenomenal amounts.

A major funding obstruction occurred in 1972 when President Nixon declared that the \$18 billion authorized for three years of Clean Water Act funds would "bust the budget," and impounded one half of that amount. Three years later, the money was freed, but there was only a short time in which to spend it.

And all funding delays aside, EPA itself estimates that the cost of meeting all requirements of the Clean Water Act is an incredible \$167 billion, which at current spending levels would take 50 years.

Despite the weakness in the system, the construction grants program is worth fine-tuning and ultimately preserving. But several modifications must be made before the program is to accomplish its goals in a reasonable period of time with a reasonable amount of funds.

Some of these modifications can be made by Congress, which will be examining the construction grants program with several bills improving the current system, according to the needs of the Nation's municipalities. Already introduced are bills designed to change the construction grants allocation formula, to adopt "two-tier" allocation of grants, and to ease the restrictions on the reimbursement for construction of wastewater treatment plants.

The construction grants allocation formula, under which the States are allocated their annual funds, would be changed to place more emphasis on solving the problems caused by combined sanitary and storm sewers, under a bill which also places emphasis on secondary treatment. If we are to use the construction grants formula effectively to meet our Clean Water goals, we must weigh the formula to do just that.

States which spend their regular allocations in a timely manner would be given more construction grant money under the "two-tier" proposal introduced in the Senate last year.

Another suggestion to decrease the effect of inflation on the grants program would be to ease the restrictions on a State or local government's ability to seek reimbursement from the Federal government for the cost of constructing, in advance, a wastewater treatment plant. This legislation would encourage municipalities to move ahead with their projects because they would have the opportunity to recoup part of their expenditures through reimbursement of funds as and if they are appropriated in the future.

I am assuming that the construction grants program will be reauthorized, although the levels of funding for the program during the last few years have been uncertain at best. What we have to assure is that we get the most water quality benefit for the tax dollars that will be spent in the future on these projects. Our goal is to have fishable, swimmable waters in the 1980's, and the construction grants program should be geared toward this goal, not to encouraging community growth and the like.

But Congress alone cannot make all the repairs to the construction grants program. Though it causes some delays, the EPA's recent requirement of reviewing advanced wastewater treatment projects has saved an estimated \$35 million in the construction costs of 64 projects. The extension of that reviewing process will continue to cut construction costs and unnecessary spending.

The EPA and Congress must review cost effectiveness guidelines for sewage treatment projects and tighten the reserve capacity rules for new plants, to prevent us from overbuilding. We must also give the greatest priority to those projects that achieve the greatest amount of pollution reduction.

Considering the obstacles involved in establishing the administration of the construction grants program, coping with the early funding impoundments and delays, and early underestimates of the costs of cleaning our waters, the construction grants program has done rather well. But there is much left to be accomplished, and much that must be changed to accomplish it.

The continuing construction grants program must be a marriage of several parties: Projects that meet high ecological standards, construction that is cost and energy-efficient, and plans that are in tune with a community's needs and environment.

Time to accomplish these goals is running out. All of us—Congress, the Federal Government, and State and local governments—must act now to build the facilities needed to protect and preserve our irreplaceable waters. It can—and I believe, it will—be done. □



*Senator Chafee is a member of the Senate Subcommittee on Environmental Pollution whose jurisdiction includes the Clean Water Act.*



# Superfund: Solving the Problem Without Regulation

By Congressman James J.  
Florio, (D-N.J.)

**T**wo years ago, the problem of exposure to hazardous wastes from leaking, inactive and abandoned disposal sites was unknown. Now, it is the number one environmental priority of the 96th Congress. Love Canal—site of the first abandoned chemical dump to receive public attention—has become synonymous with environmental disaster.

Other names have been burned into our memories: Jackson Township, N.J., and Toone, Tenn., where people drank water poisoned by hazardous wastes; Elizabeth, N. J., where erupting hazardous waste drums and fires sent toxic chemical fumes billowing into the air and forced people indoors to escape the threat; the Valley of the Drums, Kentucky, where

careless hazardous waste disposal provided the ultimate obscenity in desecrating land and endangering public safety.

With each passing week and the disclosure of another hazardous waste insult, the Nation has learned that the Love Canals and Elizabeths were not isolated incidents, but examples of a pattern of abuse experienced from coast to coast. Right now, there are scores of improperly managed hazardous waste sites that are catastrophes waiting to happen. An unknown number of sites across the country, perhaps in the thousands, threatens the health and welfare of the American people.

In designing a solution to this most important environmental problem, two objectives must be met. First, the current threat to public health and the environment from problem sites must be removed. The fact that people are now being exposed to extremely dangerous chemical wastes is intolerable.

Second, the potential threats from problem sites must be prevented, through remedial actions, from becoming real threats. While everyone can readily see the need to respond to immediate emergencies, the importance of *preventing* potential threats cannot be forgotten. For economic, as well as social benefits, such prevention is an absolute necessity. An example is illustrative. At Love Canal, New York, the government has spent on the order of \$30 million

for response measures. In addition, damage suits amount to billions of dollars in claims. By contrast, the site could have been secured properly at the time of disposal for an estimated \$3 million.

These figures leave little doubt that an ounce of prevention can be worth far more than a pound of cure—not to mention the savings in pain and suffering of the affected people. The option to manage properly those wastes which have already been buried obviously does not exist. However, significant savings can be realized by early response to potential threats from problem sites.

The sooner a problem site can be remedied, the smaller will be the extent of contamination and, therefore, the less expensive it will be to respond. It seems likely that the amount of money which will be available in a "Superfund" initially will be less than the ultimate need. Therefore, it makes sense to spend that limited money as efficiently as possible. A preventive approach to hazardous wastes will achieve that efficiency.

In achieving these objectives, the need for a strong Federal role is indisputable. The problem is clearly national in scope. Leaking inactive and abandoned hazardous waste disposal sites are not clustered in one or two states; they are spread throughout the country. The price tag for cleanup of problem sites is large. Although the



A team from EPA's Office of Research and Development helps in the cleanup of a hazardous waste dump site.



exact figure is unknown, it is likely that the cost will be, at the bare minimum, an amount in the hundreds of millions of dollars. In certain cases, there will be either no identifiable party associated with a problem site or a party without the financial wherewithal to carry out a cleanup effort.

All of these factors lead to the need for a Federal program. Congress has recognized this need. Legislation to promote inactive and abandoned hazardous waste disposal site cleanup is pending in both the House and the Senate; both "Superfund" proposals incorporate the concept of a strong Federal program.

The unique nature of this problem, its serious extent, and the strong need for a speedy solution combine to make this proposed Federal program significantly different from traditional Federal environmental programs.

Existing Federal environmental statutes mandating clean air, clean water, safe drinking water, safely disposed solid and hazardous wastes, and controlled toxic substances are all regulatory in nature. These laws require the establishment of uniform national standards or requirements. In general, the implementation of these laws has been characterized by lengthy rulemaking procedures followed by extensive litigation.

Years have passed from the time each of these laws has been enacted to the time when the first environmental and health benefits have been achieved. Progress has been steady but slow.

The "Superfund" legislation now under consideration in the Congress has been designed to avoid long delays in its implementation. The proposals before Congress are distinctly non-regulatory in nature. Once enacted, the Federal Government, with the help of the States, will inventory all inactive hazardous waste sites. Based upon the results of that inventory, the Federal Government, again with the help of the States, will place these sites on a priority list so that those sites posing the most serious threat will receive the earliest attention. Sites will then be investigated and cleaned up in priority order. However, as emergency situations are discovered, immediate action will be taken to mitigate a possible threat to public health.

The "Superfund" legislation is designed to encourage voluntary cleanup to the maximum extent possible. The liability, enforcement, and penalty provisions provide strong legal and financial incentives for voluntary cleanup. By encouraging companies responsible for creating problems sites to repair them, the overall problem of inactive and abandoned sites will be solved much more quickly than if the Government were forced to take action at each site.

The Government's role, therefore, is limited to cases in which the party respon-

SEPTEMBER 1980

sible for a hazardous waste release at an inactive site does not or cannot take the proper actions. Where States wish to clean up inactive sites and have the capability, monies from the Federal fund will be made available to them. The overall intent is to have cleanup of problem sites proceed as rapidly and efficiently as possible.

Superfund legislation will charge the Environmental Protection Agency with primary Federal responsibility to manage the abandoned hazardous waste disposal site problem. EPA will work with the States to develop inventories and priorities and may enter into contracts or cooperative agreements with States for site cleanup. EPA will supervise site cleanup where the States or the responsible parties for a site do not act. Finally, EPA will work with the Justice Department to recover Federal cleanup costs whenever Superfund monies are expended.

In implementing Superfund legislation, EPA will have to set aside its primarily regulatory approach. The multi-year data collection and analysis associated with national standard setting will not be appropriate. The establishment of uniform requirements which must be force-fitted across the country will not be necessary.

Within the guidelines of a National Hazardous Waste Response Plan, site response actions will be a process of problem-solving on a case-by-case basis. What Superfund calls for is a series of speedy, but well-conceived, actions.

Although standard setting and regulatory frameworks are not applicable to Superfund, EPA does have the experience and expertise to do the job. There is a current facet of Agency activity closely related to the kind of activities which implementation of Superfund legislation will call for. This is the EPA oil and hazardous substances spill response program carried out under Section 311 of the Clean Water Act.

Responding to releases or threatened releases of hazardous wastes from inactive disposal sites will be similar to responding to oil or hazardous substance spills. In many cases, the types of materials and their effect on health will be similar or the same. Therefore, the nature of both programs is response oriented rather than regulatory. For emergency situations, the same type of on-scene decision-making which characterizes spill response will be necessary for site response.

It is not a coincidence that proposed hazardous waste site Superfund programs resemble existing spill response programs. However, Superfund legislation has been designed to complement, improve and expand on the successful spill response provision of the Clean Water Act.

The concepts of encouraging voluntary cleanup, limiting the Federal response to cases where those responsible do not act, and recovering cleanup costs from respon-

sible parties, are embodied in current law and have been effective. The reason that the spill response program was used as a basis for abandoned hazardous waste site legislation is that, for the most part, it works. Incentives for voluntary action work. Government response actions have been effective. Monies have been recovered.

The Clean Water Act, however, was not designed for hazardous wastes. Superfund legislation has been developed for a specific problem not addressed by any existing statutes. Seizing on the opportunity to improve existing approaches, the House bill will overcome limitations of both the Resource Conservation and Recovery Act and the Clean Water Act.

I don't mean to imply that implementation of Superfund legislation will be easy or problem-free. The contrary is true. Technologies to clean up inactive sites are not well developed. The number of experts in site cleanup is small. Identification of hazardous waste drum contents can be dangerous and difficult. However, the underlying statutory foundations for Superfund are sound.

Although time is growing short, I am hopeful that Congress will respond to the will of the American people by enacting Superfund legislation this session. Then the Federal Government will be able to proceed with directing the important job of protecting public health and the environment from the dangers of leaking, inactive hazardous waste sites. □



*Congressman Florio is Chairman of the House Subcommittee on Transportation and Commerce, which is handling the Superfund legislation (H.R. 7020).*



# The Need for Federal Involvement

*An Interview with Gus Speth, Chairman, President's Council on Environmental Quality*



**Q** What is your impression of the Federal effort on the environment today compared with 10 years ago?

**A** Ten years ago we were really in our infancy. A big achievement of the past decade has been not only to develop the needed environmental legislation but to put the resulting programs in place.

A decade ago we didn't have the National Environmental Policy Act, the Clean Air Act, the Clean Water Act, or more than 20 other laws. There was only very rudimentary Federal involvement in environmental protection.

So, there has been a tremendous change—comparable to the change that we had in the civil rights area during the 1960's and the social legislation of the 1930's.

**Q** Are there any major gaps remaining in the Federal environmental effort?

**A** There are several, including some in the areas with which EPA is vitally concerned. Some of the Administration's proposed legislation is still pending in the Congress—for example, the "Superfund" legislation aimed at cleaning up inactive and abandoned hazardous waste sites.

We must also seriously consider additional legislation in the area of groundwater protection. We want to be sure that in the years ahead we are able to protect groundwater effectively through cooperative Federal and State arrangements.

A third area is the general question of land use. Somehow in the 1980's we have to evolve a strong partnership among Federal and State and local governments to protect this country's threatened land resources. We now have a piecemeal approach. If there is one resource in the United States today that is inadequately protected, it's our land.

There are four major land use studies now underway that President Carter initiated. The first is the National Agricultural Lands Study, which is focused on the loss of farmland to urban sprawl and other development. Second is the Conservation Incentives Study, which, like the Agricultural Lands Study, is a joint Department of Agriculture and Council on Environmental Quality effort aimed at deciding how best to address the problem of erosion and soil degradation.

A third land use study, headed by the National Oceanic and Atmospheric Administration, is looking at the impact of Federal activities on the coastal zone and how they can be made more protective of coastal resources.

And a fourth land use study effort is the barrier island study. There is an environmental impact statement out now for public review dealing with the question of barrier island protection.

For example, should we continue to provide Federal flood insurance for the barrier islands, or should we begin to put restrictions on rebuilding businesses or homes after a flood or a hurricane?

**Q** Are there any other areas where Federal legislation may be needed?

**A** We need a stronger legislative mandate to curb acid rain damage. We also need a stronger Federal program to support public participation in agency proceedings—the so-called "intervenor funding legislation." And I think we will probably identify other things as well.

**Q** What do you see as the most significant achievements as a result of the increasing Federal role in the environmental areas?

**A** The most important achievement is launching the very complicated and very important environmental programs that have been established. That is a major, historically significant accomplishment from which I don't think there will ever be a turning back.

What the public really wants and deserves is results. And there are specific results that we can point to, even though many of the programs—such as the toxic substances control effort—are just beginning to get off the ground.

Coming into 1970, we had a situation of steady declines in air and water quality. One major achievement has been to halt that decline and, in a number of areas, to reverse it. The frequency of air pollution violations is down and air quality levels have improved in many areas of the country, at least with regard to certain pollutants.

In addition, we are able to identify scores of streams and water bodies where there have been dramatic improvements in water quality. These are likely to increase significantly in the years immediately ahead because of the large Federal investment committed to municipal

treatment plants which are planned or under construction. Of the more than \$25 billion that EPA has committed in approved grants for sewage treatment plant construction since 1972, only about \$2.3 billion has been spent on plants that are actually completed. Within the next few years, we should see some significant results as that backlog of treatment plants comes on line.

We have also made impressive gains in public lands—both in additions to our parks, trails, refuge areas, and wild and scenic rivers, and in better protection of lands that are managed by the U.S. Forest Service.

In almost all of those areas, there are new legislative programs to assist in better management.

We have tightened up greatly the regimes that regulate offshore drilling and oil tankers, and while we are certainly having serious incidents they are probably far less numerous than what would occur if those programs weren't in place.

**Q** What would you say are the key environmental priorities of this Administration?

**A** The highest priority, and maybe the most historically significant, has been the commitment to protect Alaska. We have fought consistently for three years for the strongest possible protection of the natural areas of Alaska. We recently moved through executive action to protect 96 million acres in Alaska because of the delays in getting necessary legislative protection.

A second goal has been to reorder the country's energy priorities. There are a number of different aspects of that. First is the commitment which the President made a year ago to having 20 percent of our energy resources come from solar and other renewable sources by the year 2000. A program was established to back that up, including the solar bank. There are a number of other initiatives to promote solar energy as well.



Related to the solar effort is a commitment to make conservation the cornerstone of the Administration's energy policy. This has been backed up by an impressive series of measures to promote energy conservation in all sectors—including, in the recent legislation, a conservation bank which will give low-interest, long-term loans to home owners to retrofit their homes with measures to increase energy efficiency.

Similarly, we have tried to reverse the momentum that existed in the previous Administration towards plutonium utilization. The President has successfully deferred the effort that was underway to reprocess nuclear fuel and to recycle plutonium, and we have also moved to reduce the priority that would have been given to the breeder reactor program and to terminate the proposed Clinch River Breeder Reactor. Breeders, as you know, produce plutonium. Both for domestic environmental and economic reasons, and for international nuclear non-proliferation reasons, the President has been committed to reducing the emphasis on plutonium and to moving away from that to safer and more economical nuclear technologies.

At the same time, the Administration has been pursuing a more accurate and balanced assessment of what the nuclear future really is. There have been estimates that the country would need 300 to 400 nuclear power plants by the year 2000. The Department of Energy has now reduced those estimates greatly, and the President has indicated that he wants to put quick solar and conservation efforts first, give coal a higher priority, and pursue nuclear power only after those options have been fully tried.

All of that is reflected in a rather dramatic reversal of historical patterns that occurred in the Fiscal Year '81 budget that was just submitted to Congress. For the first time in history, the level of funding committed to solar energy was higher than the level of funding committed to nuclear fission. Also for the first time in history,

the level of funding for nuclear fission actually went down in absolute terms from previous years. And the single largest component of the expenditures proposed by the Administration in Fiscal Year '81 was for conservation.

**Q What about pollution control and other environmental programs?**

**A** A third priority area for the Administration has been to continue the vigorous enforcement of pollution control programs. Despite a lot of pressure from many sources to weaken those programs, we have continued to support them—with a strong group of appointees at the Environmental Protection Agency and strong funding. The funding for the regulatory programs at EPA has, I think, been adequate. In the toxics area, for instance, it has gone up substantially. So, in a period in which some may have hoped that a number of environmental programs would be cut back because of competing economic and energy problems, we have had instead a period of steady and balanced enforcement and progress under EPA Administrator Douglas Costle's leadership.

An additional area of major accomplishment is the effort to reform the way that water resources projects are planned, developed and implemented. The aim is to insure that these efforts put first priority on water conservation and do not neglect environmental protection.

Finally, we now have in place for the first time a comprehensive and environmentally sensitive program for moving ahead with nuclear waste management.

We have put together the sophisticated and committed effort that the problem deserves, including a commitment to take a step back from previous plans to rush ahead with an early commitment to nuclear waste storage. Instead, we want to adopt a more balanced, longer-term program of looking at a variety of different possibilities and studying them intensely

ly and in depth before making any decision about the type of geologic formation or location that would be most suitable for nuclear waste.

**Q Does the increased environmental protection effort mean a greater Federal role—more big government?**

**A** It has to vary from issue to issue. For pollution control, we have to have national standards because otherwise States will compete with each other for industry by seeing which can have the weakest programs and therefore attract industry. Also, pollution doesn't respect State boundaries. There have to be national standards in those areas, and I think the presence of the Federal Government will inevitably be very strong.

The Federal presence will also be strong where Federal lands are involved. While such lands must be managed with great sensitivity to local aspirations, they are public lands and the national interest must be kept at the forefront.

There are other areas, like the protection of privately owned agricultural lands, where the principal government involvement is going to be State and local. For instance, in management of coastal resources State and local governments are closer to the problems than the Federal Government, and we have to rely on their expertise.

**Q Some Federal environmental regulations are being criticized as excessive and unfair. Do you believe the critics are right?**

**A** The anti-regulation crusade is being pushed in a rather self-serving way by a segment of business that in fact needs to be regulated.

I am not saying that the way we regulate can't be improved. Indeed, the list of things that the Administration has done to reform regulation and to eliminate waste, duplication, and unnecessary burdens is quite long, and we have to keep doing those things.

But we have to remember that the benefits of Federal regulation far outweigh the costs, even if you're just talking about the benefits that you can quantify. We also need to remember that there is a big difference between reforming regulation and *deforming* regulation. Companies like Mobil Oil who suggest that we should consider a moratorium on Federal regulation at this time are being very cavalier with the public interest. For example, what would a moratorium on Federal regulation do to the program which we are just now developing to protect people from hazardous and toxic chemicals? What would it do to cancer rates and to efforts to halt the destruction of fisheries in the Great Lakes and in the Hudson and James rivers? What would it mean in terms of our ability to protect the public from radiation from nuclear power plants?

I don't think the public wants the Federal government to let up in its protection of the public interest, in protecting environmental quality and public health. So, while there is concern these days about big government and about government regulation, the appropriate response is a greater sensitivity to red tape and unnecessary burdens and an effort to achieve more efficient regulatory processes. But we shouldn't cut back on regulating. If anything, in my judgment, the public wants more environmental protection. That's the meaning of public concern about Love Canal and Kepone and Three Mile Island.

**Q What is the significance of the Global 2000 report by the Council on Environmental Quality and the State Department?**

**A** The report has some very profound conclusions and findings. It suggests that our global resource and environmental problems are sufficiently serious that we are going to have to put an increasing share of our national resources, energies, and concern into them. We are going to have to get

some of our domestic preoccupations and concerns resolved and behind us so that we will have the energy to address these global problems.

We think of renewable resources as being just that, resources that you can count on being renewed. But the study indicates that global renewable resources—agricultural lands, water, and forests—and the atmosphere, and species of life around the globe are really all endangered.

If current policies and current commitments don't change, such trends could radically alter the face of the planet and its habitability.

**Q** Given such damages, are you optimistic that we can eventually achieve a clean and healthy environment in this country and globally?

**A** I am more optimistic about this country than I am about the global situation. Relatively speaking, our problems are under better control than many global concerns. Of course, everyone has a share in the global problems in some way. For instance, we have our own problem of farmland losses, which is very significant and parallels the global problem.

It is going to be very difficult to address these global problems with the authority that they require. Partly that's because some are not felt by many people, although they are very immediate to others. Partly it's because they demand a far-sightedness and a sense of international involvement that is difficult for people anywhere to develop.

On the other hand, there are some very encouraging signs. The soundings that we have made, both through public opinion polls and our contacts with citizens and the many environmental organizations around the country, would suggest that the public concern about environmental quality is still quite high. The vitality is still there. In some ways it expresses itself differently than it used to. There was a time when people thought of "the environment"

as one great issue. Today, more than before, people are beginning to form coalitions to work on smaller pieces of the problem. It is, I think, a healthy development. It's very hopeful to note that we haven't turned away from environmental protection and environmental concerns and that we have made the progress that we have despite the competition for public attention and commitments because of our economic problems and our energy problems.

There has been a bright side to our energy problem: It has taught us all the value of conservation. A Nation of consumers must become a Nation of conservers. Fortunately, we're already moving in that direction.

**Q** Some skeptics have said that the National Environmental Policy Act will gradually become ineffective. They believe it will be kind of a compromise Federal law. How do you see that?

**A** I don't think it has become that at all, nor will it in the future. There were a number of problems with NEPA when we came into office a few years ago. They had to do with the way the environmental impact statement process had come to be implemented. The statement had too frequently become a document that was used to justify decisions that had already been made and to defend those decisions. As a result the documents were sometimes very long and defensive.

We decided that we had to change that. We got a mandate from the President to issue regulations which would be binding on all Federal agencies.

The regulations put a premium on brevity and on eliminating unnecessary paperwork. They provide an opportunity for an applicant to request and receive a target deadline for the completion of the impact statement process. There is a requirement that all permits and

other Federal approvals that are necessary for a particular proposal will be identified at the outset and coordinated in the impact statement process.

There are very specific requirements for defining the alternatives that have to be discussed in the impact statement. The entire process is moved back in time so that the draft impact statement has to be published when all the options are still available for consideration and the agency has not made up its mind definitely. The public has a right to try to affect the decision in the period after the final statement is available. If the agency does not choose the environmentally preferable alternative at the end of that period, it has to say, in a public document, why it hasn't. I think that's a very important requirement.

It was a good series of reforms, and I think we have taken the barnacles off this ship. We have a situation, fortunately, in which both sides in the debate have praised the results. We have received letters of commendation from both environmental groups and the U.S. Chamber of Commerce on the reforms, a rare accomplishment in my experience.

**Q** A prominent scientist recently wrote that he was concerned about the danger that this country could become another banana republic if we continue to stress quality rather than quantity in our lives and policies. He contended that our highways, city streets, industries, etcetera, are all gradually beginning to deteriorate and the pace of life is going to slow down and we could become just another society unable to keep up with the leading powers of the world because we won't have a strong defense, good transportation, good housing. Would you like to comment?

**A** His concept is that we have to choose between the quality of life and reindustrialization of the country. That phrase "reindustrialization of the country" is an extremely ambiguous one. It was also

Jerry Brown's campaign slogan when he was running for President, and yet he was an advocate of maintaining our quality-of-life programs as well.

It seems to me that the argument that we must choose needs to be more closely investigated. We should be able to rebuild infrastructure in the country without abandoning social security and other social programs and environmental protection.

The environmental programs are not having large effects on economic growth. The analyses that have been done suggest that the economic effect is very small. The environmental effort seems to help economic progress in recessionary periods, and it would have a small depressing effect in boom periods. But all in all, it's not large in either direction.

It seems to me that to the extent we need to rebuild our infrastructure, the environmental position has a lot to offer in terms of how to do that. If we can revitalize our urban areas, rebuild our railroads, improve the systems of public transportation that we have, protect our agricultural base, improve our recreational resources, insure that our commercial fisheries are protected—all of these things are environmental opportunities. If we are going to retool our automobile factories, or rebuild steel plants, that's a tremendous opportunity for better environmental protection.

So, I see efforts to revitalize industry and urban areas and transportation systems as something that environmentally concerned people have a lot to contribute to. □

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



# Interior and the Environment

By Cecil Andrus  
*Secretary of the Interior*

**B**y the very nature of its mandate, the Department of the Interior plays a leading role in the protection of the American environment. It is responsible for the wise use of our natural resources and for helping the American public determine just how our still rich store of resources will be used and how it will be protected.

The comparatively easy part of the job involves making decisions to preserve inviolate the most beautiful and significant portions of our environment for the benefit and enjoyment of future generations of Americans.

After walking through the majesty and cathedral-like stillness of a giant redwood grove there can be little doubt that these giants and the environment that supports them must be preserved for all time. The decision was easy, but there were a number of legislative battles to win before it became a reality. While the protection of the redwoods in an expanded Redwood National Park in California meant temporary dislocations for some, I believe that the end result was a tremendous victory for America's legacy of natural beauty.

We are now fighting a similar but more complicated battle in Alaska. Here the challenge is not to protect a single spectacular resource but rather to analyze the natural and historic treasures of a great land and determine which should be protected and which should be developed.

Alaska is a land of awesome beauty, vital wildlife habitat and valuable energy and mineral resources. We have a responsibility to manage the land so that we can extract the minerals, fuel and timber our country needs while preserving Alaska's superlative natural beauty and wildlife habitat. The Alaska legislation recommended by the President more than two years ago was designed to achieve just such a balance.

While we have all been disappointed that the Congress has not yet passed legislation which would achieve the essence of what the President proposed, I still believe that such legislation can be passed and that

the opportunities will be realized for the prudent development of Alaska's resources, including those which nourish and sustain the spirit as well as those which nourish and sustain our economy.

To protect the more than 100 million key acres of especially significant Federal lands in Alaska until Congress completes action on the legislation, President Carter has placed some 56 million acres in national monument status, and I have withdrawn an additional 40 million acres primarily for management as wildlife refuges.

Throughout the Nation the National Park System preserves the crown jewels of our heritage—natural and historic. I am proud of the job that is being done to preserve these treasured places and to make them available for the use and enrichment of Americans from all walks of life.

One difficult problem is maintaining the crystal clear air that is so much a part of so many parks in the Southwest. A number of parks have been recommended for protection under the Clean Air Act and we are also working with the States and energy industry to find and develop sites for power generation that can use the rich coal resources of the area and not seriously degrade the air above the parks.

Through the efforts of the Heritage Conservation and Recreation Service, the Department of the Interior plays a major role in the growth and development of State and local outdoor recreational resources and in the growing awareness of the need to better identify and preserve a rich legacy of historic buildings and structures and a myriad of natural landmarks which contribute so much to the diversity of our land.

We also possess a diversity of animals and plants—many unseen or unrecognized by most of us—that adds to our lives in many ways. Too often the continued existence of these creatures is threatened by ongoing civilization. To make sure that the future environment of this Nation contains the fullest possible spectrum of life the Fish and Wildlife Service maintains the endangered species program to identify and then protect wildlife that, through man's

activities, is on the brink of extinction. It works with the States and other Federal agencies to help identify and protect the habitat of endangered species.

It should be noted that even the whole of the United States is not a large enough environment to protect a world heritage of nature. The Fish and Wildlife Service also cooperates with other nations and international organizations for the protection of migratory waterfowl under treaty, and for endangered species everywhere.

The Service also operates many wildlife refuges and hatcheries to maintain the population of many species of mammals, fish and birds in the face of encroachments resulting from loss of their former habitat.

With the new hard realities of life in an energy-short era many Americans are beginning to feel like endangered species, or at least question whether we can maintain the lifestyle to which we so happily accustomed ourselves. I believe that for the most part we can. There are going to be some changes, some of them painful, but with an application of American ingenuity and determination we can manage our resource base in ways that protect and enhance the environment and yet contribute to a strong economy and continued development of our potential for lives of purpose and achievement.

To do that we shall have to maintain, through enlightened decisions, the balance between resource use and protection. The Bureau of Land Management makes many such choices in its administration of some 400 million acres of public domain. It seeks to manage timber sales and grazing leases on those lands in such a way as to maintain sustained yields of forage and forest products, and allow the extraction of coal, oil shales and other vital minerals with a minimum of dislocation to the land.

Under the Federal Land Management and Policy Act of 1976, the Bureau is now clearly mandated to do more than manage commodity resources, by developing complex land use systems that will preserve primitive and prehistoric values—notably

in places like the Birds of Prey Primitive Area in Idaho and the huge California desert but elsewhere as well—while also accommodating recreationists of all kinds. It is no simple task, and requires some new ways of doing things. The Bureau also now has major Wilderness Act responsibilities. Its diligence and effectiveness are attested to in many parts of the West where some traditional users have promoted the so-called "Sagebrush Rebellion" aimed at turning Bureau of Land Management lands over to the various States. The "Rebellion" dramatically underscores the many competitive pressures Interior faces in seeking a balance among all legitimate land uses.

A major Bureau of Land Management effort is planning the development of offshore oil and gas reserves which are a vital part of our economic future but which must be leased with utmost care so that an accident does not mar an often sensitive marine or coastal environment. The U.S. Geological Survey administers and inspects the actual oil and gas development on Federal lands, both offshore and onshore, in close cooperation with the Bureau of Land Management.

Similar planning is being done in the Interior Department's Water and Power Resources Service (formerly the Bureau of Reclamation). We need the pristine environment of free flowing streams and rivers and we need electricity for homes and industry and we need irrigation water to help grow foods and fibers we consume. Dams and irrigation projects that are not thoughtfully planned and executed would have a detrimental environmental effect. The Department has played a major role in the more careful analysis of the environmental effects of water projects across the Nation. This not only protects the American environment but the American pocketbook as well.

There is no question but that the extraction of minerals from the earth is often a very disruptive process that can leave scarred and sterile landscape behind it.







But there is also no question we can extract minerals and then return the land to a useful and attractive condition—a productive and beautiful environment.

The Office of Surface Mining is leading a cooperative program to restore lands already damaged by coal mining activities and to establish restoration standards and requirements for new surface mining activities. This major effort in regulation and reclamation is being implemented at the State level and operates with a continued citizen input. I have great faith in the ability and the willingness of the people to work in a very active way for the protection of the lands and resources, while meeting the need for conversion to coal.

Primary among groups whose culture reflects a real sensitivity to the environment are the Native Americans—Indians, Eskimos and Aleuts. With the aid of the Bureau of Indian Affairs, Native groups in the lower 48 States and Alaska are planning to develop their very substantial mineral resources in ways which avoid the environmental pitfalls of careless planning and exploitation. These projects will be under the direction and control of the tribes and will provide the employment opportunities that will permit many young people to find jobs without having to leave their traditional homelands.

Across the Nation there have been very direct and immediate benefits to the environment through the activities of the Youth Conservation Corps, the Job Corps and the Young Adult Conservation Corps. Interior is pleased to have a major role in these programs. Projects, big and small, have improved the public lands, parks and refuges. Many young people have learned skills that will enable them to find jobs. And these young people have had the ex-

posure to the natural world that gives them the understanding and respect for our environment necessary to make decisions as informed and active citizens.

Finally, our technological society has too often demonstrated its capacity to develop new threats to the environment. Yet it is that same technology that can provide us with the tools to protect our environment and reverse some of the damaging trends in resource use and development. The Geological Survey and the Office of Water Research and Technology are working to give us a better understanding of the nature of our planet and its natural systems. The better we understand the earth and its lifegiving water the better we can protect it and ourselves.

You can see that I define the word “environment” very broadly. I think that we must always consider the fact that the total quality of our lives will be determined by the total environment we live in. Just as no organism lives in a vacuum apart from others, our total environment is a seamless web in which we work and live. Each part of it is dependent on all the others. We are continually discovering how its parts work together, and seeking new and better ways to achieve harmony within the whole.

Implicit in all these efforts by Interior is the obvious fact that humankind is a part of the environment and that it will continue to interact with all the other parts as long as we survive on this planet. People need jobs, transportation, food, clothing and shelter, and much more besides. Human activity will always impact heavily upon the total environment—and be impacted by it, as the eruption of Mount St. Helens so recently reminded us. We are a part of the whole, and not necessarily the most dominant part. We have no choice but to search constantly for better ways to live with nature’s awesome forces and bountiful gifts. We need to make our living, and we also need a life that is worthwhile for ourselves and our descendants. □

*Surf fishing in the Atlantic Ocean at Cape Hatteras National Seashore in North Carolina.*

# Energy and the Environment

By Charles W. Duncan, Jr.  
*Secretary of Energy*

**T**his year—1980—marks the tenth anniversary of America's great environmental movement. It marks the completion of a decade of environmental progress and the beginning of a new decade of intense dialogue on energy development and environmental concerns. The big question being asked today is: "Are environmental and energy goals compatible?" And, not surprising, we can easily line up well-intended groups and well-thought-out arguments on both sides of the issue.

Back in 1970, cynics claimed that furor over the environment was a mere passing fad; that a fickle public would soon lose interest in environmental issues. They were wrong, of course; overall interest and commitment to improving the environment did not wane, even when the costs for pollution control seemingly began to hurt. Ironically, the Nation passed another milestone back in 1970 and few people paid much attention to it. The production of petroleum in the United States peaked that year. This turning point measurably hastened America's growing dependence upon foreign oil suppliers.

As a Nation, we are moving as quickly as possible toward a more balanced and diversified energy base. We simply must reduce our dependence on petroleum. This means making greater use of coal and solar and other renewable energy sources. It also means the birth of a brand new industry in this country—the synthetic fuels industry. And it means taking care along the way to minimize their environmental effects.

Environmentalists are rightly concerned that moves toward greater domestic energy production, and toward development of alternate energy technologies, not be at the expense of environmental quality.

We cannot afford incompatible environmental and energy goals. In a climate of mistrust, where both sides take non-negotiable stands, the risk of failure is increased—failure of the country to provide for its energy needs, failure to make environmental progress, or both. However, in a climate of accommodation, where new technologies are sensitive to environmental needs, and where standards for clean air

and clean water are geared to normal risk tolerances, the Nation can continue to maintain and improve our health and safety and our energy self-reliance.

Coal is a prime example. In the 1980's we are going to mine and burn more coal than ever before. And we are going to have to do it without doing irreparable damage to the environment. Half a century ago, coal meant steam locomotives, clinkers in the basement furnace, and dirty air in such places as Pittsburgh and St. Louis and other big cities.

Today, increased use of coal means unburdening the Nation from the tremendous economic liability of imported oil, weaning ourselves from the whims and politics of foreign countries. It means using our technological strength and ingenuity to make coal an agreeable neighbor as well as a valuable asset.

Is increased coal production and usage a threat to environmental protection? Clearly not!

The law that created the Department of Energy to set a strong policy to meet the Nation's present and future energy needs also demands that the policy and program be consistent with the Nation's environmental goals. Those goals include restoration, protection, and enhancement of environmental quality while assuring public health and safety.

In the long-run, the only way to eliminate our dependence on foreign oil is by embarking on a transition to an efficient, post-petroleum world. While some may view this transition with a sense of foreboding, I view the years ahead as a time of unparalleled opportunity. Change is inevitable, but it is through change that we see improvement. As a result, I envision cities, transportation systems, buildings and schools that are better equipped to meet our energy and environmental needs.

The centerpiece of our energy program, and the most environmentally attractive element in our strategy, is a far-reaching commitment to increasing the efficiency of energy use. America matured in an era

when oil cost \$2 a barrel; today, the world price is over \$30. Cars that were popular when gasoline was cheap are no longer acceptable to most Americans. And the adequacy of insulation is today a major concern to the homeowner and prospective purchaser.

We should invest in efficiency until the price of saving the next unit of energy is as high as the cost of producing it. If such a criterion had been followed in the past, we could enjoy our present level of economic productivity using half the fuel we currently consume. Our refrigerators would keep our food just as cold, but use only half as much electricity. Our automobiles would be comfortable and safe, but would require only half as much gasoline. Our schools and offices and homes would be more pleasant, with fewer drafts and cold spots, and they would burn only half as much fuel.

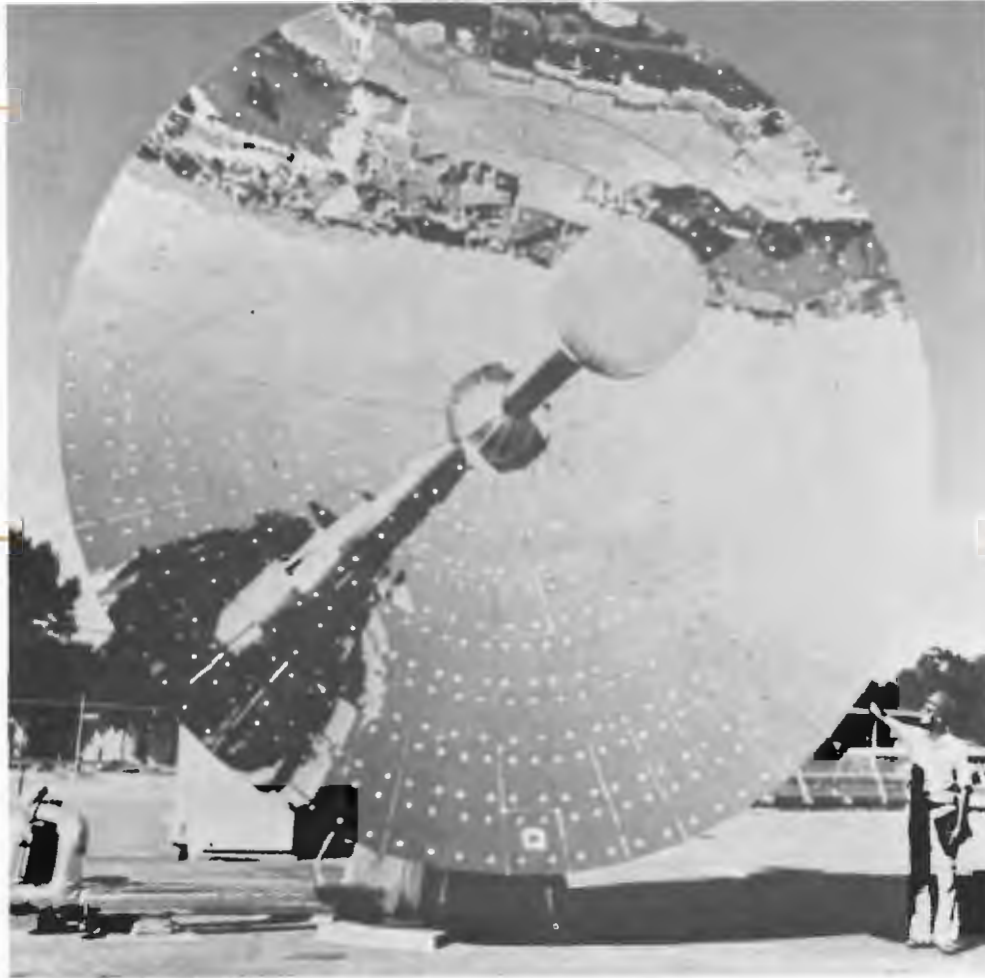
In the years ahead, we will achieve that kind of efficiency in our cars, appliances, and buildings. Improved performance is being demanded, pushed by higher energy prices and special incentives such as tax credits, efficiency standards and a new multi-billion dollar Conservation and Solar Energy Bank.

Yet no matter how much we conserve, we must also develop new sources of supply. One day this Nation may get most of its energy directly and indirectly from the sun. President Carter's pledge is to vigorously advance toward that end by turning to solar energy for at least 20 percent of the national energy budget by the year 2000.

Direct solar energy, and such indirect solar sources as wind, hydropower, and biomass, have many attractions. They tend to be safe, resilient, dependable, and easily applied at the individual and community levels. Moreover, if developed correctly, they are the most environmentally attractive energy options we have.

Many solar technologies are technically mature and commercially available today. We are encouraging their use with tax credits, the solar bank, and many public information programs. Other solar technologies require further research and de-





*Solar collector at the Energy Department's Sandia Laboratories in Albuquerque, N.M., concentrates heat from the sun.*

development efforts, being undertaken by the Department of Energy and private industry. I expect to see a major private sector commitment to solar in the years ahead.

Although our ultimate goal may be an efficient society, powered by clean, renewable sources, the path to that end will not be easy or quick. Three-fourths of our energy is now produced by oil and gas. We must make efficient use of our other, more abundant fossil fuels—coal and oil shale—as sources of liquid and gaseous hydrocarbons.

The Department of Energy is promoting the rapid development of a number of clean coal technologies whose potential, both in terms of meeting environmental standards and of energy production efficiency, is enormous.

Next year, for the first time we will spend over \$1 billion on research and development into technologies to burn coal directly and indirectly more cleanly and more efficiently.

The Energy Department will continue to examine the cost-effectiveness of health, safety and environmental regulations. We realize that the future of coal is largely contingent upon the willingness of the American people to see it as a safe, clean, abundant and relatively inexpensive energy source—and that environmental concerns are not going to go away, but must be con-

sidered as part of our political and economic way of life.

The efforts of industry, for example, must be directed toward working with the Federal Government to develop and commercialize technology which will enable us to burn coal in a manner consistent with environmental standards.

We are optimistic about coal because production can be rapidly expanded. The industry today has about 100 million tons of idle capacity, which cuts into profits, aggravates unemployment and hurts the consumer. It certainly represents a lost opportunity to curtail our dangerous dependence on imported oil.

We have every reason to believe that the Synthetic Fuels Corporation—a basic element of the Energy Security Act the President signed on June 30—will stimulate demand for an additional 150 to 200 million tons of coal during the 1980's, and up to 300 million tons by the end of the century. The Corporation will not displace the private sector. It is still up to industry to build the plants and commercialize the technology. But this Corporation will provide a mix of loans, loan guarantees and price-purchase guarantees which will accelerate the industry's development and allow a wide range of private firms to participate in creating a commercially viable syntfuels industry. But that industry must be developed with full consideration of environmental and social impacts.

We must also recognize that nuclear

power must continue to play an important role as alternative sources are developed. But it must be used safely. Therefore, we are taking steps to improve nuclear power plant operations. Reactor safety is the most critical element of any program which seeks to restore public confidence in nuclear energy. The safe handling of nuclear waste is also a critical area that has been aided by our concentration on developing the framework for a strong and close relationship between the States and the Federal Government.

A State Planning Council was established early this year consisting of governors, cabinet officials, local government officials and a representative of the Indian nations. On the recommendation of the Council, in July the Department of Energy wrote to the governors and the Indian nations seeking close cooperation in our program to expand our study of geologic environments and to identify potential disposal sites.

Fundamentally, all Americans share the same basic objectives. We want a healthy environment for our children, powered by energy sources that are benign, resilient, and sustainable. In getting from here to there, it is the EPA's mission to protect the Nation's natural endowment, and it is the Department of Energy's mission to safeguard our economic well-being and our national security by assuring the development and use of our domestic resources. Those different missions need not be in conflict.

Neither energy nor the environment can stand alone in the world in which we live today and build for tomorrow. We cannot make our decisions solely on one criterion or the other, because we are not a single-issue society. Our interests and our concerns are as numerous and diverse as our people and our resources. In the kind of democratic society in which we fortunately live, this inevitably will lead us to compromises and adjustments as we seek the best, if not the perfect, path through this twenty-year transition to an energy-secure America. □





# Aiding the Overseas Environment

By Douglas J. Bennet, Jr.  
*Administrator, Agency for  
International Development*

**W**ill the Panama Canal be an empty ditch by the time Panama takes it over in the year 2000? This is a distinct possibility if current plans are not successful in arresting the massive deforestation that is causing the soil erosion and serious silting of the Canal.

Can mountainous Nepal afford the annual loss of 315 million cubic yards of precious topsoil—topsoil that clogs new irrigation canals in India's Gangetic plain? That is the amount its rivers carry to India every year because of soil erosion resulting from harmful agricultural practices and deforestation.

Can the world continue to cut down 10 percent of its tropical forests each year?

These are vivid examples of how environment deterioration can adversely affect economic development in the Third World. In both instances, the Agency for International Development is helping to reverse the trends. Panama, with assistance from AID, is working on a comprehensive management plan for the Canal watershed. In Nepal, an AID-backed conservation program aims at helping the country solve natural resource problems through training, research, technical assistance and extension efforts.

Environmental considerations are as great in the Third World as in industrialized nations. More and more, developing countries see the importance of environmental concerns, even in the midst of mounting economic and political pressures.

There is growing recognition that environmental damage can quickly wipe out the gains from development projects, deplete or destroy the resources vital to future progress and actually hurt the very people who are supposed to benefit.

Countries frequently must confront the undesirable and often unforeseen consequences of projects started years ago. For example, the U.N. Environmental Program warns that snail fever now threatens

over 1.5 billion people in 72 countries—in part as a result of thousands of dams and irrigation schemes that have provided wide new breeding grounds for the fresh-water snails that carry the schistosomiasis parasite.

AID's programs reflect increasing efforts to make environmental considerations part of economic development. Our role is to increase understanding, to help developing countries identify major environmental problems, to improve their capacity for taking action and, finally, to take joint steps to correct the problems through sustainable development assistance.

According to the Natural Resources Defense Council, "Within the last decade AID has changed from an agency which paid little conscious attention to environmental aspects of development into a leader within the international development assistance community in addressing the serious environmental problems confronting developing countries."

The countries AID assists have many problems in common. These include:

- Land deterioration—desertification, erosion, salinity build-up, waterlogging, declining fertility, deforestation.
- Water quality and quantity—siltation of lakes and reservoirs, contamination of surface and ground water from agricultural, industrial and domestic wastes.
- Damage to fishing waters.
- Air pollution.
- Loss of indigenous plant and animal species.
- Depletion of mineral and energy resources

In addition, population growth and rapid expansion of cities strain resources and services, while inadequate water and waste systems add to pollution and health problems. Poorly planned and constructed irrigation systems, housing, dams and roads may further harm water and soil resources, increase health hazards and hurt agricultural production.

The level of environmental awareness and the ability to act vary sharply from country to country. Some are just becoming

aware of such problems. Others, ready to turn awareness into action, often lack the resources to carry out effective programs.

What specifically is AID doing to help?

For fiscal 1980, the Agency planned 146 environmentally related projects involving drinking water and sanitation, pollution control and abatement, environmental health and disease control, forestry, conservation and management of land and water, and similar areas of concern. The cost: \$260 million.

In Africa, conservation of land and water resources is essential to AID's program, which emphasizes increased food production. For example, AID has provided technical assistance and \$3.2 million to Lesotho's \$11 million Taba Bosiu agricultural project, a joint effort with the Lesotho government and other international donors. Improved agricultural practices and conservation training there have paid off in the last few years as farmers learn for themselves how erosion can be checked. In the Sahel region of West Africa, where an estimated 205,000 square miles of agricultural and grazing land in eight countries have been lost to the encroaching Sahara Desert because of overcropping, overgrazing and deforestation, AID is funding small-scale forestry projects adapted to community needs for fuel, construction materials, food and fodder.

One unique solution to the energy and environmental problems posed by deforestation is being explored in Burundi. At the current cutting rate, the country could be totally without trees in seven years. But Burundi's peat bogs may offer rapidly dwindling forests a chance to recover by providing peat as a source of energy at a sixth of the price of charcoal made from wood. AID helped in the exploratory efforts and is examining the environmental implications of an expanded program.

In Latin America, countries such as Guatemala, Panama, Ecuador, Bolivia and Peru are receiving more basic assistance in tackling deforestation and soil erosion problems. A number of proposed projects

*Tree nursery in Jordan.*



*Cow dung in India is made into cakes for fuel for cooking and heating.*

would provide financial and technical assistance in a variety of areas: for systems to inventory and monitor forests and natural resources using remote sensing and other techniques; for research on agroforestry, fast-growing trees and species that stabilize soil; and for a credit extension system to help spread useful technologies.

In Costa Rica, where forests have been depleted by 40 percent during the past 20 years, an AID loan of \$9.8 million will assist resource management and conservation through regional planning, reforestation and watershed management. The loan will also support planning for a new national park and office for forestry and protection of wild lands.

In the Near East, major environmental problems stem from pollution, depletion and improper use of limited water resources as well as urban land use and management of rural land. Agricultural mechanization in many instances has accelerated the deterioration of water and soil resources. However, the problems are not being ignored. An AID-funded environmental assessment helped prevent some

unwanted effects of development projects in Jordan. Morocco expects to overcome land use problems through improved planning and programs in range and forestry management.

Several countries in Asia have established environmental boards or ministries and passed legislation to deal with the problems. A number of private environmental groups are also active. But the lack of reliable data and trained people severely hinders countries in carrying out programs.

Indonesia, for example, plans to set up 15 environmental study centers at major universities. AID is assisting the center at the Bandung Institute of Technology, which will concentrate on human settlements, manmade environments and the environmental impacts of industrial development. AID advisers are helping to develop a training program, publications for an environmental clearing house, and short-term training and seminars for academics and government personnel.

A massive program to develop the Mahaweli River basin in Sri Lanka is a good

example of how environmental concerns are being incorporated into development planning. Three dams will be built to increase food production and spur rural development and employment by bringing new land under cultivation. More than 450,000 people will be resettled. What will be the consequences on downstream areas, fisheries, plants, wildlife and the people who must be resettled from land flooded upstream? At the request of the Sri Lanka government, AID is funding an environmental assessment. Although not yet completed, an interim report identified potential adverse effects on wildlife, resulting in a project proposal to mitigate some of those impacts.

Developing and industrialized countries alike face difficult choices in balancing agricultural, industrial and energy needs against limited natural resources. The results of environmental abuse—climatic changes, damage to fisheries, air and water pollution, acid rain—do not stop at national borders. Solutions ultimately will depend on cooperation between governments, international organizations and corporations. □



# Highlights of the Federal Environmental Effort

By Charlotte Garvey

## The Estimated Benefits of Environmental Legislation and Regulation

The President's Council on Environmental Quality has conducted a review of the benefits of pollution control to Americans through the passage of the Clean Air and Water Acts.

### Air Benefits

The review indicates the most reasonable estimate of benefits

to Americans in 1978 from improvements in air quality since the Clean Air Act was passed in 1970 to be \$21.4 billion.

- \$17 billion as a result of reductions in pollution-related death and illness.
- \$2 billion in soiling and cleaning cost reductions.
- \$700 million in agricultural production increases.
- \$800 million in property value increases.
- \$900 million in corrosion prevention.

## Achievement of Federal Environmental Objectives

### Air Quality

Over 80 percent of major air pollution sources now comply with the Clean Air Act. 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.

The Council on Environmental Quality, using EPA's pollutant standards index on combined data from 25 major metropolitan areas, showed that the number of unhealthful days declined by 15 percent between 1974 and 1977, while the numbers of very unhealthful days declined by 32 percent.

Tailpipe standards set by EPA should reduce emissions from gasoline and diesel-powered trucks and buses by 90 percent, beginning with 1984 models. The new standards will control hydrocarbon and carbon monoxide emissions for vehicles over 8,500 pounds gross weight, and represent a 90 percent reduction from 1969 emission levels.

EPA also has set new auto emission standards to reduce particulate exhaust released

into the air from diesel cars and light-duty trucks, to take effect with 1982 models. Auto manufacturers estimate that 20 percent of the auto market will be diesels by the mid-1980's.

### Fuel Conservation

Since standards were set by the Energy Policy and Conservation Act, average new car fuel economy has risen from 14.4 miles per gallon to 20 miles per gallon.

By 1985, the average miles per gallon requirement for each fleet of new cars will be 27.5 miles per gallon.

All of the top ten cars tested for miles per gallon ratings in 1980 averaged over 30 miles per gallon.

### Land Use

Between 1974 and 1979, \$70 million was distributed to States for development of coastal management programs: 15 of 35 plans have been Federally approved.

In 1980, the Soil Conservation Service will survey and map about 50 million acres of soil to determine trends in land use and if this use is best suited to the capabilities of the land.

The total designated and proposed Wilderness Lands have nearly doubled since 1970, and now total almost 93 million

### Water Benefits

A report prepared for EPA by the JACA Corporation of Port Washington, Pa., estimates that each dollar of Federal lake clean-up funds has resulted in \$8 in benefits. Total government investment in lake clean-up, including matching State and local funding, is returned four-fold to the taxpayer, according to the study.

Estimates of anticipated water pollution control benefits by 1985 range from \$6.5 billion to

almost \$25 billion a year. The CEQ report concludes the most reasonable estimate of the annual water pollution benefits accruing by 1985 is \$12.5 billion. These benefits are primarily in the area of recreation, in improved opportunities for swimmers, boaters and fishermen. Pollutant removal also reduces certain waterborne diseases, lowers municipal water treatment costs and reduces costs to households and industry.

acres; the National Wild and Scenic River System has nearly tripled since 1970, and now embraces over 2,000 miles of river.

The Department of Agriculture and the Council on Environmental Quality are conducting the National Agricultural Lands Survey to study what is happening to agricultural lands. The study should be completed by January 1981.

### Noise Control and Abatement

About 90 local communities have active noise control programs, while about 1100 communities have some type of noise control ordinance on the books.

EPA offers financial assistance to help States and communities launch noise control programs. EPA assisted 16 States in 1979 and anticipates assisting eight to 10 State programs in 1980.

In 1979, EPA gave financial assistance to 12 community programs and expects to aid seven to 10 programs in 1980. Under these cooperative agreements, the Agency helps States and localities identify their own particular noise problems and build programs in response to their needs.

In 1979, 10 universities with EPA assistance established regional technical centers to help

EPA regions provide on-site technical assistance to State and local noise abatement projects.

Under the Each Community Helps Others (ECHO) program, EPA provides transportation costs for representatives of communities to share their noise control experiences with other communities. As a related part of the ECHO program, EPA has established an experience-sharing program dealing specifically with the noise abatement problems of airports and their surrounding communities.

### Radiation

The White House has designated EPA as the lead Federal Agency responsible for the monitoring of off-site radiation levels around Three Mile Island, and for the implementation of a comprehensive program to keep the local elected officials and the public fully informed of near and long-term cleanup activities.

The Department of Health and Human Services is researching the effects of low-level radiation exposure by studying the health effects on people exposed to small radiation doses at the Three Mile Island accident.

The Department of Energy is conducting a study of the effects of low-level radiation exposure on over 250,000 subjects who have worked in



shipyards involved in Navy nuclear submarine programs.

## Research and Development

The fiscal year 1980 budget authority appropriation for EPA research and development is \$368 million.

EPA's Office of Research and Development is conducting an accelerated research effort investigating the acid rain problem, with a 1980 budget of over \$5 million. Acid rain, a result of sulfur and nitrogen oxides changing chemically into acids, is a threat to crops, fish, trees, lakes, soil fertility and buildings.

An interagency Acid Rain Coordination Committee was established in 1979, co-chaired by EPA and the Department of Agriculture. In its first year, the Committee had \$10 million in reprogrammed funds available for research.

EPA's Office of Research and Development has helped develop a new coal burner that could reduce nitrogen oxide emissions as much as 85 percent. In addition to reducing the health risks of coal-burning, the burner offers promise for further development of coal as an environmentally sound energy source.

The National Oceanic and Atmospheric Administration will conduct a \$474 million multidisciplinary effort in ocean and coastal mapping investigations, climate and research, environmental monitoring and prediction activities and data archiving and dissemination services.

The Nuclear Regulatory Commission will review and upgrade standards for construction specifications of nuclear power plants to prevent the release of radioactive pollutants.

## Solid and Hazardous Waste

A system to manage hazardous waste from the point of generation to ultimate disposal is being established by EPA. The system requires that producers

and processors of hazardous waste register with EPA and also requires that EPA be notified if the waste does not reach its designated treatment, storage or disposal site on schedule.

EPA, with State governments, has inspected over 1,200 potential hazardous waste disposal sites. As a result, 29 improper disposal cases have already been filed with the Department of Justice, and EPA has tentatively determined 159 sites require some type of enforcement action.

EPA has launched an emergency response capability program to deal quickly with threats posed to navigable waters by toxic chemicals.

EPA grants will aid 63 communities in planning and development projects to recover materials and energy from solid wastes.

## Toxics and Pesticides

EPA has published the country's first comprehensive inventory of chemicals produced in the U.S. or imported here. The list contains over 50,000 compounds produced or imported since January 1, 1975. Firms wanting to produce or import chemicals not listed must notify EPA and submit available studies on the health and environmental effects of these new materials before they can be put on the market.

Seven notices of intent to manufacture several plasticizers have been withdrawn because of EPA's requirement to provide significant information on the potential near and long-term health and environmental hazards of all chemicals to be manufactured or imported.

EPA in 1979 banned chlorofluorocarbons for use as propellants in most aerosol sprays

in the U.S. These compounds can destroy the stratospheric ozone layer that shields the earth from harmful ultraviolet radiation that can cause skin cancer and damage animals and plants. EPA is urging reduction of chlorofluorocarbon production by other countries.

EPA and the Department of Labor have entered into a joint agreement to conduct a five-year study of the effects of pesticide exposure on the health of agricultural employees under the age of 16. The agreement calls for cooperative enforcement efforts by the Labor Department and EPA.

EPA has developed a new system for reviewing the safety of pesticide products. The registration standards system sets safety standards for pesticide ingredients, then approves or disapproves the sale and use of individual products depending on whether they meet the standards.

## What's Being Spent by the Federal Government

The fiscal year 1980 Federal budgeted outlays for environmental and ecologically-related programs break down as follows:

|   |                       |
|---|-----------------------|
| • Pollution control and abatement (reducing pollution from Federal facilities, establishing and enforcing standards, and conducting research and development) | \$ 2.8 billion        |
| • Construction grants (to help communities build waste treatment plants)  | 3.8 billion           |
| • Soil mapping, river basin surveys   | 2.3 billion           |
| • Recreation programs, wildlife protection, historic preservation   | 2.7 billion           |
|   | <u>\$11.6 billion</u> |

The Environmental Protection Agency has primary responsibility in most environmental areas, including 72 percent of total 1980 Federal outlays for pollution control and abatement, but 18 other agencies have significant environmental responsibilities as well.

These 18 agencies include: The Departments of Agriculture, State, Education, Commerce, Defense, Energy, Health and Human Services, Housing and Urban Development, Interior, Justice, and Labor; Consumer Product Safety Commission, National Aeronautics and Space Administration, National Science Foundation, Nuclear Regulatory Commission, Smithsonian Institution, Tennessee Valley Authority and the Council on Environmental Quality.

## Water Quality

By 1981, 51 of 57 States and territories will assume primary responsibility for Safe Drinking Water Act compliance, helped by Federal financial aid.

EPA has found more than 70 examples of clear-cut improvements in river and lake water quality from Hawaii to Maine, and from Alaska to Texas.

From 1973-1978, ocean dumping decreased by 24 percent. Federal law requires a halt to all dumping of harmful municipal sewage sludge by the end of 1981.

EPA has committed more than \$25 billion in approved grants for sewage treatment plant construction since 1972. Each billion spent for construction results in roughly 15,000 workyears on the construction site. (A workyear is the equivalent of one person working one year.)

Charlotte Garvey is an editorial assistant on the EPA Journal staff.



# Conservation Rediscovered

By M. Rupert Cutler  
*Assistant Secretary of Agriculture*

**T**oday our country faces greater demands on its basic natural resources than ever before:

- Growing populations here and abroad demand more food, fiber and forest products;
- Pressures are increasing on our land and water for municipal and residential uses, for mining and industrial uses, for power generation; and
- Energy costs are rising . . . and rising . . . and rising.

New technology was the answer to many of our problems in the past, but new technology to solve today's resource problems is slow in coming, slow in practical application, and uncertain—possibly undesirable—in its environmental effects. Many people think there is another, supplemental answer today.

The American people are "coming home" to the principles of conservation and recycling for solutions to our resource problems. Until they had to wait in gas lines, many Americans never gave natural resources a second thought. Now, because of energy shortages and the environmental movement of the last decade, almost everyone realizes that the country's supplies of resources do have limits. Fossil fuels, of course, are the most obvious example, but soil, water, forests, farmland, wildlife, and other basic resources are threatened as well.

People also are coming to realize that using natural resources prudently—conserving them—has the same effect as producing more. And for once, the Federal Government is in step with the people.

The natural resource conservation achievements of the Carter Administration probably outshine those of any since Theodore Roosevelt's, but they have been made with much less fanfare. Nowhere is the commitment to conservation of our natural resources and to a healthy environment more pervasive than in the U.S. Department of Agriculture.

At the U.S. Department of Agriculture we are re-evaluating all our policies, procedures, and programs to guarantee that the Nation's vital resources will be pro-

tected for future generations even as they meet the needs of our own. And with the growing concern about inflation, we also want to make sure that conservation work produces the desired results—and at the lowest cost to the taxpayer.

For example, to protect against upstream flooding, it was standard practice for years to reconstruct stream channels so that they were deep, straight, lined with riprap (a wall of stones), and free of debris. These channels may control floodwater upstream, but they provide almost no habitat for fish and other aquatic life, and they magnify floodwater problems downstream.

The Department doesn't modify stream channels drastically anymore except where it is absolutely necessary. We evaluate each stream channel. We clear the brush from one side only, leave pools and bends in the stream, and try to make the channel conducive to wildlife wherever we can.

Other resource problems are more complex. For instance, the U.S. is losing 3 million acres of farmland each year, 1 million of which is prime farmland—the flat fertile land best suited for growing crops. Much of this land is being converted to residential and commercial uses, highways, reservoirs, and other nonfarm uses. In almost all cases, this land can never be farmed again. The Nation—and the community—lose not only the capacity of the land to produce food and fiber but also lose open space, wildlife habitat, and other environmental and esthetic values.

The Department of Agriculture respects the rights of individuals and State and local governments to determine land use. However, conversion of land to non-agricultural uses is often supported in some way by public funds, as with airport, highway and sewer and water line construction. It is now our policy to advocate the retention of important agricultural lands whenever proposed conversions are caused, encouraged, or licensed by actions or programs of a Federal agency and where reasonable alternatives exist. Secretary

Bergland has directed that no Department of Agriculture agency may aid or abet such conversions.

The Nation also is losing its wetlands at an alarming rate of 300,000 acres a year, and two-thirds of this acreage becomes cropland. Many of these wetlands are valuable wildlife habitat; many act as blotters to absorb stormwater, help control flooding, and recharge groundwater supplies. The Department now advocates the retention of ecologically important wetlands, and will not provide assistance to drain such wetlands to convert them to other uses.

We do not oppose development and change, but in the past too little attention was paid to environmental degradation and waste that accompanied our so-called "progress." In many cases, suitable alternative sites can be found for buildings and highways so that prime farmland, wetland, or land that has some other environmental value is left intact.

Our Soil Conservation Service provides to local governments and private developers maps showing important farmlands so that they can make more informed decisions.

The Service also supplies soil surveys and technical assistance to planners. In addition, an inventory of all wetlands in the U.S. will be completed next year, and that information will be available as well.

We have undertaken new programs to meet environmental needs never before addressed by the Federal Government. For instance, more than a million acres of land in this country have been surface-mined for coal and then abandoned, with little or no reclamation. This land is unproductive; it is an eyesore; it pollutes water and air; it can endanger the public health and safety.

Through the Rural Abandoned Mine Program started last year, the Department provides technical and financial assistance for reclaiming these areas.

When we think of water pollution, we most often imagine chemicals or effluent pouring from a pipe into a river or lake. That is called point source pollution. But







*Planting crew placing seedlings in burned-out Montana forest.*

there is also nonpoint source pollution, which is the result of runoff from land. This runoff carries into the water supply pesticides, fertilizer, chemicals, animal wastes, and sediment—the biggest water pollutant of all.

Through the 1980 Rural Clean Water Program, USDA is experimenting to determine the best ways of controlling nonpoint source pollution, sharing with farmers the cost of installing "best management practices" on their lands.

We are working to minimize the quantity of possibly toxic synthetic chemicals on your food and in your environment by advocating an "integrated management" approach to controlling insects and other pests. This approach includes encouraging orchardists and other farmers to use biological and cultural control techniques and pest-resistant plant varieties . . . and fewer chemical sprays . . . when practical and proven alternatives exist.

And we are now practicing environmentally sensitive forestry on the 187 million acres of National Forests and Grasslands we administer.

An environmental conservation policy that changes with each administration is worthless. By their nature, resource problems take years to correct—to replace polluted river water with clean water, to regenerate a new layer of topsoil to replace that lost to erosion, to grow new trees.

And resources must be managed consistently. The gains made through years of diligent care can be wiped out by a bulldozer in one day.

To assure a consistent conservation policy for the future, we are carrying out several ambitious long-range planning efforts. One involves forest and rangeland, led by the Forest Service; another involves soil and water; and a third deals with getting resource information to the people who need it, through Cooperative Extension programs.

At this time we are calling for the public to participate in one of these efforts under the Soil and Water Resources Conservation Act.

Last year we conducted a massive appraisal and analysis of America's soil,

water, and related resources. The public participated in this effort through some 9,000 meetings. From the appraisal and analysis, we identified seven resource problem areas and goals for improvement in each. Then we proposed alternative strategies that would change our programs to meet the goals.

Now it is time again for the public to review the Soil and Water Resources Conservation Act documents and make comments and suggestions.

We recognize as no other administration has before that the American people know what's happening to the environment and the American people have good ideas about conservation. And it is ultimately the American people who will determine whether the Nation's environmental resources will be conserved or abused.

Those of you who own land—the lot your house is on, business property, vacation property, farms . . .

Those of you who develop land, who design homes and workplaces, who sell property, who are involved in zoning . . .

Those of you who are concerned about vanishing open spaces and woods and the wild dogwood, holly, and oaks . . .

Those who are concerned about water pollution and supply, who are concerned about wildlife, who are concerned that Chesapeake Bay blue crabs are smaller and fewer than ever . . .

All of you have valuable viewpoints to contribute to the way the Nation manages its natural resources. We at the Department of Agriculture encourage you to do so. I guarantee you that we'll listen, and that we will seriously consider your views.

The Federal Government is making every effort to help protect our environment in a way that is consistent with the desires of the American people. And now that Americans are rediscovering the principles of resource conservation, the outlook for our environment is good. □

*M. Rupert Cutler is Assistant Secretary for Natural Resources and Environment, U.S. Department of Agriculture. The above article was adapted from a speech by him earlier this year in Vienna, Va.*



# Key Federal Agencies

**M**ost Federal agencies have some environmental responsibilities. Several articles on the environmental activities of Federal departments are carried in this issue. The following piece provides a brief review of some of the less well known but vital environmental activities of a number of Federal agencies.

## Department of Commerce

The National Oceanic and Atmospheric Administration (NOAA) works to conserve certain marine mammals and endangered species, maintains a fisheries habitat protection program, and monitors the quality of the marine environment. It provides funds to States for coastal resource management programs, and administers the National Marine Sanctuaries Program and the National Estuarine Sanctuaries Program.

This Department of Commerce agency has the lead role in developing a comprehensive five-year plan to investigate ocean pollutants, and has responsibilities for oil and hazardous spill response, including damage assessment, and ocean dumping research.

Environmental studies of specific regional problems, such as sewage sludge disposal in the New York Bight, are conducted, and NOAA is assembling an inventory of global oceanic data including the world's only international collection of marine pollution data.

NOAA evaluates atmospheric transport and transformation of acids, and operates a net-

work of stations that monitor atmospheric ozone depletion and increased concentrations of atmospheric carbon dioxide.

The Agency has lead responsibility for the National Climate Program, a multi-agency effort to collect data, study forces that may alter climate, and analyze the environmental, economic, and social implications of climate variability.

NOAA has completed a major project to identify environmentally critical resources on the East Coast.

## Department of Defense

The Defense Department reports the following environmental actions: Of the nearly 13,000 separate air pollution sources spread throughout U.S.



military installations, over 98 percent are in compliance with EPA and State regulations. Seventy-four percent of the installations are in compliance with water pollution regulations. Approximately 99 percent of the 448 installations that require spill prevention, countermeasure and control plans have established these plans, and 54 percent have completed the necessary projects to implement those plans. In addition, the Department is participating in area-wide wastewater treatment systems, installing several refuse incinerators which simultaneously generate usable energy, implementing integrated pest management programs, and recycling waste paper, aluminum cans, and lubricating oil.

The Department's primary environmental concern for the 1980's is hazardous material management. As a diverse in-

dustrial operation, hundreds of Defense installations are involved daily with many aspects of hazardous material management.

## Department of Education

The Office of Environmental Education administers the Environmental Education Act. The activities of this Office in the Education Department are designed to help provide effective interdisciplinary environmental education programs. Such education is defined by the Act as a process involving the study of the relationships between the natural and social support systems that, together, constitute the total human environment and define the quality of life.

Under the Environmental

and Human Services is concerned with every aspect of environmental hazards affecting human life and safety.

Congress has given the Agency responsibility for conducting several prevention and control activities related to the health effects of toxic hazards.

In the area of toxic chemicals, the Public Health Services works closely with the EPA, State governments and the medical community to protect the public from disease and illnesses due to hazardous waste dumps. In addition, under the auspices of the Department of Health and Human Services the Public Health Service has developed a National Toxicology Program to find new testing methods for chemical health hazards.

Health Service radiation activities center around regulatory radiation protection, research, waste management and crisis management.

The National Institute of Occupational Safety and Health directs activities aimed at assuring safe and healthful working conditions for all working people through research and the establishment of standards.

## Department of Housing and Urban Development

The goal of a suitable living environment for every American has been part of this Department's mandate since 1949.

The Department's mission, however, is not just to abate pollution, but to help shape a high quality urban environment. It has found that employment, education and other social needs are integral factors in such an environment.

Major programs, such as the Community Development Block Grant program and Urban Development Action Grants, link environmental assessment and decision-making at the local level where there is greater understanding of needed projects and their impact. Thresholds have been established for housing projects to help determine if the impact will be significant and an Environmental Impact Statement (EIS) will be necessary. The

Education Act, the program has focused on the development of basic resources, models, and processes that can assist local implementation of local programs. The priority of the program over the past year has been on dissemination, training and technical assistance. Grant and contract support for new development work is not anticipated in the coming year. For information concerning available resources and other types of assistance, contact the Office of Environmental Education, OSI OERI, Education Department, 400 Maryland Avenue, S.W., 1100 Donohoe, Washington, D.C. 20202.

## Department of Health and Human Services

The U.S. Public Health Service of the Department of Health



Department has spearheaded development of the Areawide EIS, which is designed to assess the total effect of several projects in an area.

As the primary Federal urban agency, the Department has led Federal efforts to formulate and to implement this Administration's Urban Policy, participating with other agencies such as the EPA and the Economic Development Administration in demonstrating that urban air quality and economic development are not incompatible, and leading in establishing new methods for analyzing the impact of proposed Federal programs on the quality of urban life.

### Justice Department

The Land and Natural Resources Division of the Department of Justice conducts the government's litigation to improve the environment.

This program entails civil litigation on behalf of such agencies as the Environmental Protection Agency, the Army Corps of Engineers, the Coast Guard, and the Department of Energy, and criminal litigation under the pollution control statutes.

The Division enforces numerous statutes.

To address the mounting environmental problems, the Division has created two sections—Pollution Control and Hazardous Waste. The sections' principal client is EPA, whose cases account for some 70 percent of the docket. In recent years, the number of cases referred by EPA has increased dramatically.

In the hazardous waste area, some 30 civil suits have been filed. Recently, the first suit was filed against the generators of hazardous wastes—10 major chemical corporations that dumped wastes at two sites in Louisiana—as well as against the owner of the sites.

### Department of Labor

The Occupational Safety and Health Act of 1970 is an environmental as well as a public health law. This Act created the Occupational Safety and Health Administration in the Labor Department to help employers protect their employees and empowered the Agency to issue and enforce safety and health regulations.

OSHA regulates toxic and hazardous substances in the workplace basically in two ways. Worker exposure limits have been set for more than 400 contaminants; an average airborne concentration has been established for each substance and must not be exceeded during the workday. For about 20 toxins, most of which are carcinogens, the Agency has issued more comprehensive standards which include an exposure limit, engineering or other methods to meet it, and provisions for workplace monitoring, medical surveillance of exposed workers, employee training and education, substance labeling, and recordkeeping.

Since 1977, regulations on inorganic arsenic, inorganic lead, the pesticide DBCP, acrylonitrile, and cotton dust have been promulgated. The Agency has also issued a generic carcinogen standard to speed the regulation of cancer-causing substances and a rule permitting worker access to medical and toxic exposure records. Projects currently underway include a final standard on beryllium exposure and a proposal to require generally the identification of hazardous substances.

### Department of State

To protect and manage the environment and resources of the U.S., this Nation must also consider the international and global effects of policies and practices of other countries because environmental and resource damage does not respect national boundaries. And because the U.S. shares a common ecological system with other nations, American pol-

icies can affect environmental conditions in neighboring as well as distant countries.

In keeping with American foreign policy considerations, the State Department is the focal point for linking U.S. domestic environmental and resource interests and activities with those abroad. Through its overseas missions and domestic programs, the Department informs other governments of U.S. policy in these broad areas and reports on developments abroad. It represents the United States in a host of international organizations and negotiates agreements on environmental and resource matters. The Department also manages and monitors all science and technology agreements with other countries, including those involving environment and resources. It provides policy guidance, direction and coordination to the international activities of domestic agencies in these fields.

### Tennessee Valley Authority

Since Board Chairman S. David Freeman brought his environmental concerns to the Tennessee Valley Authority three years ago, the multi-State Agency has experienced a change of direction.

According to the Agency, more than half of TVA's 63 coal-fired generators, using more coal than any electrical utility in the country, are now in compliance with Federal clean air standards; the rest will comply before 1983—at a cost of \$800 million.

TVA's agricultural and natural resources management programs and community development activities are being focused on the objective of "quality growth" for the region's seven million residents. TVA wants to be "a yardstick in the 1980's by demonstrating the compatibility of industrial growth with environmental quality," Freeman says.

The Tennessee River is the object of fresh scrutiny by TVA, which discovered that its sys-

tem of 36 dams often reduces oxygen in the water to levels that make it unusable and unsafe in some places.

In 1979, TVA put air, land, and water management functions under one office, the Office of Natural Resources. Within this group it established an Environmental Quality Staff and gave it broad power to weave environmental quality into all TVA projects and programs. The staff also advises the TVA Board on environmental policy and charts new environmental initiatives that go beyond mere regulatory compliance.

### Transportation Department

In his environmental message of May, 1979, the President directed the Secretary of Transportation to ensure that transportation projects are designed to promote energy conservation and to reduce urban sprawl and adverse environmental and employment impacts. In implementing this directive, the Department has required consideration of non-construction alternatives and options such as noise barriers, and is more closely examining the energy and environmental consequences of its actions.

The Department has programs underway to improve air and water quality and reduce transportation noise. For example, the Department has an on-going program with EPA and cities to implement the transportation-related requirements of the Clean Air Act.

With respect to water quality, the Transportation Department's Coast Guard has developed sophisticated techniques to prevent and clean up oil spills, and recently issued regulations establishing new standards for the design and operation of large oil tankers to reduce the probability and severity of oil spills.

The Department recently issued a report on the energy-saving potential of increased bicycle transportation, and announced a significant new program designed to increase bicycle use. □

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

### AIR

#### Arsenic

The EPA has named inorganic arsenic—a substance strongly linked to human skin and lung cancer—as a hazardous air pollutant. This action, called "listing" under the Federal Clean Air Act, initiates the development of regulatory programs directed at controlling industrial emissions of arsenic.

While scientists have for years been concerned about the toxicity of all arsenic compounds, this concern has recently focused specifically on inorganic arsenic. Epidemiological evidence has shown that inorganic arsenic is clearly a carcinogen.

#### Clean Air Act

EPA Administrator Douglas M. Costle recently outlined a possible change in the Clean Air Act to deal with acid rain, but warned that Congress could "substantially gut" the law due to pressure from special interests.

Speaking to the Air Pollution Control Association in Montreal, Canada, Costle said he seriously questioned whether the State implementation plan process—that requires a State by State, plant by plant approach—was the best way to solve the problems of acid rain in a timely fashion.

"I would personally prefer," Costle said, "a regional, multi-State approach to the problem of total loadings—one which would, for example, allow an entire utility system to find the most

cost-effective approach to getting a percentage reduction from among a mix of all their plants, based on their proportionate contribution to overall regional loads. Such a system should even be flexible enough to permit trade-offs with other utility networks."

Despite the accomplishments of the Clean Air Act, Costle went on, it is a troublesome and complex statute.

"The inherent complexities of air pollution control make it easy for an opponent to propose language changes which—seemingly innocuous on their face—in fact weaken the law to a serious degree. Lawyers are paid fortunes in Washington for such 'creative draftsmanship,'" he said.

#### Organic Solvents

Air pollution regulations proposed recently by EPA would reduce degreasing operation emissions of organic solvents by 64 percent in industries throughout the U.S. by 1985.

Degreasers are used to clean metal, plastic, fiberglass, and other materials. Nationwide, degreasing operations are responsible for about four percent of all stationary source emissions from industries.

#### Power Plants

The EPA is setting final emission limits for two Cleveland Electric Illuminating Company power plants that will cut current sulfur dioxide emissions into the atmosphere by 100,000 tons per year. The final standards affect the two Cleveland area plants in Eastlake and Avon Lake, Ohio.

The new standards are more stringent than those proposed for the plants last year, which essentially preserved the status quo while EPA gathered monitoring data and de-

veloped new modeling techniques. In part, the final standards adopted reflected a recent change in the Agency's policy on power plant smokestacks.

Under the new policy, utilities will no longer be automatically granted pollution reduction credit for raising smokestacks; they now must perform wind tunnel tests demonstrating that increasing the height of smokestacks is necessary to avoid excessive pollutant concentrations at ground level near the plants. If the tests show such increases are unnecessary, EPA will not give ground level pollution reduction credit for the taller stacks, thus removing the major incentive for raising the height of smokestacks.

### ENFORCEMENT

#### Hazardous Waste Suits

The Department of Justice has filed a suit on behalf of EPA seeking an end to the health and environmental danger posed by the unsafe storage of hazardous chemicals at a site near Denver in Jefferson County, Colo. The complaint alleges that American Ecological Recycle Research Corporation stores incompatible and flammable hazardous chemicals in an unsafe manner which could result in explosion, fire, or the release of toxic fumes.

A fire at the site on October 17, 1979, released hazardous chemicals and vapors into the environment and resulted in twelve firefighters being sent to a local hospital with suspected cyanide poisoning.

The Government suit asks the court to issue an injunction requiring the company to cease receiving additional wastes, to identify and segregate or remove incompatible and hazardous wastes, to

arrange for adequate fire protection at the site, to securely fence the site, and to submit an adequate plan for continued operation.

The Justice Department on behalf of EPA has also filed suit against two firms in Columbia, S.C. (Richland County) for the improper storage and disposal of hazardous waste at a site near Columbia called the "Bluff Road site."

The suit contends that illegal dumping by South Carolina Recycling and Disposal, Inc. and Columbia Organic Chemical Co. has created an imminent fire hazard at the site and a risk of contaminating groundwater and nearby surface water. The owner of the property, Oscar Seidenberg, was also named as a defendant in the suit.

The Department of Justice has also filed a civil suit on behalf of EPA against Spectron, Inc., a chemical recycling company, and its owner, Paul J. Mraz, charging that the company improperly stored and disposed of chemical waste which caused contamination of the soil and the water of a nearby creek.

The suit asks that, under an EPA-approved plan, Spectron be required to clean up the site, and provide adequate facilities for any future storage of hazardous wastes. The suit further seeks long-term monitoring of the groundwater under the site, in addition to posting warning signs of the dangers of swimming, fishing, and drinking from the creek, and a fence around the site.

Also, the Department of Justice on behalf of EPA recently filed suit against Fisher-Calo Chemicals and Solvents Corporation and David B. Fisher, its president, for operating an unsafe waste

disposal facility in an industrial park near La Porte, Ind.

The suit asks Fisher-Calo to permanently prevent all waste products on the site from further contamination of the groundwater, to cleanup the groundwater already contaminated, and to excavate the buried drums and contaminated soil.

The suit also names Kingsbury Industrial and Development Corporation, the manager of the industrial park where the Fisher-Calo facility is located and the owner of the land on which some of the dumping occurred.

#### More Facts

The EPA is seeking additional information from three companies and five individuals concerning water softening resin which may be contaminated with uranium. This action follows discovery of contaminated resin in recent months by Michigan authorities and EPA's Hazardous Waste Enforcement Task Force. Since that discovery, EPA has done additional testing. In addition, the dealers involved have been asked to voluntarily cooperate in recalling the resin or accounting for its disposition.

The Agency suspects that most of the resin has been in use since 1974 and that its contamination level, if any, is very low. There is no known risk in handling or storing the resin.

The additional information sought will help the Agency decide if new regulations are needed or if EPA should take other legal steps.

#### Complaints Issued

The EPA has issued administrative complaints against twelve companies and is seeking \$51,450 in penalties for violations of un-



leaded fuel regulations. The alleged violations took place in the Richmond, Va., and Washington, D.C., areas. Complaints assessing penalties of \$23,600 were issued against five companies for equipping leaded gasoline pumps with undersized nozzles which allows the gasoline to be used in vehicles designed for unleaded gasoline.

Civil complaints assessing penalties of \$27,850 were also issued against seven other companies for selling, dispensing, or offering for sale gasoline represented to be unleaded which was contaminated with lead.

#### GM Recall

The EPA has ordered General Motors Corporation to recall 169,000 of its passenger cars to repair defective emissions control equipment. The two recall orders stated that approximately 105,000 1976 and 1977 Cadillac Seattles (including those sold in California) with a 350 cubic inch displacement (CID) engine and 64,000 1977 Oldsmobile Cutlass, Omega, and Delta 88 models with a 260 CID engine were not meeting the Federal oxides of nitrogen (NOx) standard applicable to those model years.

## PESTICIDES

#### Pesticide Approved

The EPA has approved a "biorational" pest-control agent for use in combating destructive grasshopper populations in several Western States. The substance, called *Nosema locustae* (trade name "Noloc"), works by infesting the hoppers with a deadly natural parasite harmful only to this insect. The term "biorational" refers to pest control based on natural

factors rather than inherent toxicity.

*Nosema* is manufactured by Sandoz, Inc., of San Diego. The Agriculture Department tested it last year with some success on 100,000 acres in northwestern Wyoming, where it was combined with the chemical pesticide carbaryl to provide a quick "knock-down" effect.

This season *Nosema*'s effectiveness is being further tested on 35,000 acres in Arizona.

#### Pesticide Sprayer

A machine that sprays a concentration of electrically charged pesticide droplets at target insects or weeds was demonstrated in Tifton, Ga. recently. The occasion was a field day sponsored by the EPA, the U.S. Department of Agriculture, and the Georgia Agriculture Experiment Station.

The Agency said the machine's principal advantage over conventional sprayers is that, since the pesticide is electrically attracted to target weeds and crops, there is less pesticide drift.

The big, 12-row sprayer is specifically designed to apply cotton insecticides and defoliants. It is still in the experimental stage. Another blast-type, orchard sprayer, also still in the experimental stage, was shown as well as an earlier, smaller test model.

#### Pesticide Proposal

The EPA has proposed requiring a phaseout of the use of the pesticide diallate in its emulsifiable concentrate formulation, because it poses a high risk of cancer to the men and women applying it in the fields. Diallate is an herbicide used to control wild oats in sugar beets, flax, lentils, dry peas, alfalfa, field corn, potatoes, and soybeans.

Because of its importance to growers, the Agency is proposing to allow a two-year phaseout for the sole importer, Monsanto Agriculture Products Co. of St. Louis, and others selling the product, to give them time to convert to granular formulations of diallate. The granular form was found to pose a low risk to applicators handling it and the Agency said it would propose to allow its production and use to continue without restriction. The granular form is presently approved for use with sugar beets.

Until the final shift is made, the Agency said applicators applying the emulsifiable concentrate formulation, which is liquid, should wear protective clothing, rubber gloves and cloth face masks.

## WATER

#### Groundwater

New rules to prevent contamination of underground drinking water by chemical wastes or other materials injected below ground through wells were issued recently by the EPA.

Some 650,000 injection wells for waste disposal or other purposes now dot the country, with 85 percent of them in 22 States.

The rules set minimum safety requirements for five types of underground injection and require all States and Territories to come up with plans containing the requirements within nine months. After the plan is accepted, the State or Territory must begin an inventory process culminating in the issuance of permits in order for wells to be operated.

For the time being, however, permits will not be needed for certain wells including those used for storm-water runoff or for air conditioning return flows until further studies have been made of their potential for contaminating underground water. Production wells drilled to obtain oil and gas are also not affected by the rules.

#### EPA—Corps

The U.S. Army Corps of Engineers and EPA have agreed to extend the interagency agreement under which the Corps will review proposals to construct sewage treatment facilities being built around the country, as well as conduct progress inspections on these projects.

The multi-billion dollar construction program, one of the Federal Government's largest, is conducted by EPA under the Clean Water Act as a key means of cleaning up water pollution in the Nation's rivers and streams.

## TOXICS

#### Chemical Records

The EPA recently proposed regulations to require firms that make or process chemicals to keep records and in some cases to report on allegations they receive that the chemicals may have harmed human health or the environment.

Agency officials say records of such allegations by workers or the general public would provide government health officials with a significant new source of information on the possible dangers associated with specific chemicals.

This proposal complements requirements already established by the

Occupational Safety and Health Administration concerning records of verified occupational injuries and serious short-term health effects.

#### Tests Proposed

The EPA recently proposed that certain chemical manufacturers and processors be required to conduct tests to evaluate the human health effects of seven chemicals they make. The chemicals are used to produce silicones, certain pesticides, gasoline additives, and other chemical products.

This action marks the first time the Agency has used its authority under the Toxic Substances Control Act (TSCA) to require that chemical producers and processors carry out studies on existing chemicals to demonstrate whether and how their products pose hazards to people or the environment.

The Agency will use the data produced to determine whether further regulatory action on these chemicals is needed to protect human health.

## AGENCY WIDE

#### Cleanup Costs

The capital cost to four major industries of meeting Federal pollution control requirements during the mid-70's was not as expensive as either the industries or the government originally estimated, according to a recently released EPA study. The industries are automobiles, pulp and paper, petroleum refining, and iron and steel.

The capital cost to a fifth industry, electric utilities, of complying with Federal clean air requirements during 1974 to 1977 turned out to be more than the electric power industry or EPA originally forecast. □

# Tracking Pollution Plumes

By Valerie Whitney

**M**ore than a dozen aircraft, including several twin-engine Cessnas, took turns searching and sampling the skies over the Ohio Valley region recently

The purpose of the study was to help improve understanding of regional air pollution and such specific problems as acid rain and visibility reducing aerosols. Aerosols are suspended liquids or solid particles in a gas, such as sulfate which results from the conversion of sulfur dioxide.

An important mechanism of sulfate formation, during the warmer months, is oxidation of sulfur dioxide by photochemical processes of which the formation of ozone in the air near the ground we breathe is the best example. Besides ozone and sulfates, photochemical processes form nitrates including nitric acid. Acidic

the polluted air crossed into Canada, scientists from the Atmospheric Environment Service of Environment Canada would pick up the pursuit. The Canadians, like their American counterparts, would use both vans and planes to track the pollution.

The \$2 million field study was officially known as the PEPE/NEROS Study and was a collaboration of two operations with overlapping missions. The initials PEPE stand for "Persistent Elevated Pollution Episode," which results when a slowly moving and, at times, nearly stagnant mass of air accumulates high pollutant loadings from emissions in the region over which it is drifting. This summer's field exercise allowed scientists a chance to take a close, intensive look at the physical and chemical makeup of aerosols that contribute to the air masses as well as acquire data on processes affecting urban and industrial pollutant plumes.

This summer's study is the second effort of EPA's Sulfur Transformation and Transport in the Environment (STATE) research program. The research program began in 1978 with The Tennessee Plume Study, which consisted of a month-long intensive investigation of the emissions from the Tennessee Valley Authority's Cumberland power plant.

NEROS stands for the "Northeast Regional Oxidant Study," which officially began last year with a smaller scale study over Pennsylvania and nearby portions of adjacent States. It is a three year effort to measure ozone and other oxidant air pollutants, such as hydrogen peroxide, which can react chemically with other substances in the air. The data gathered will be used to develop and validate EPA's regional oxidant model. Field headquarters for NEROS is Baltimore, Md.

For the PEPE scenario, a scout plane took off to confirm through instrumentation measurements that the expected conditions were present. The scout plane was succeeded by two primary sampling aircraft that alternated in sampling the air parcels for periods in excess of two days, to study the accumulation of pollutants and their changes with time within the parcel. The planes stayed aloft four to five hours at a time, sometimes working double shifts, coming down briefly to refuel.

Besides the primary aircraft that sampled the air directly, EPA's Las Vegas Environmental Monitoring Support Laboratory operated a plane with downward looking lidar that flew over the region under investigation to measure the distribution of aerosols in the air between flight level and the ground. Lidar is an acronym for "light detection and ranging" and refers to an array of instruments used to detect and map distributions of aerosols.

Another plane, operated by the National Aeronautics and Space Administration,



*Pollution billows up from industrial burning in Ohio River Valley*

during one of the most comprehensive air pollution hunts ever held.

The armada of aircraft was part of the equipment and instruments brought in by 100 or more scientists representing the EPA and six other Federal agencies who gathered at their field headquarters in Columbus, Ohio, to track and monitor plumes and extended areas of air pollution.

The study was performed under the direction of EPA's Environmental Sciences Research Laboratory, located in Research Triangle Park, N.C.

Besides tracking the polluted air masses as they moved across the country, scientists also carried out experiments to study their formation around cities, industrial areas, and power plants and took measurements of the chemical changes that occurred as the pollutants mixed with the atmosphere.

sulfates and nitrate compounds are important contributors to acid rain, which can have a destructive effect on plants and fish.

The Ohio Valley region was selected because of the density of pollution emissions present and the fact that geographical barriers such as mountain ranges are nonexistent in the region. Therefore all of the area within the region will be impacted by the pollution. The lack of barriers makes it easier for scientists to monitor the polluted air mass for several days without interruption.

Prior to their arrival in Columbus, project coordinators said that they were prepared to travel into every State in the Northeast following the air masses. The tracking, however, would not stop there. If



served as a flying laboratory. Unlike the other planes, which could only accommodate a pilot, technician, and observer, this one had room for a pilot, a co-pilot, a number of technicians and observers, and an array of equipment being tested for remote sensing of atmospheric pollutants. The flying lab operated out of Wallops Island, Va., while most of the other aircraft were based at the Ohio State University airport. The National Aeronautics and Space Administration also operated a smaller plane equipped to measure the total amount of ozone between flight level and ground as well as a plane which made direct measurements in support of their other two aircraft.

### Balloons Launched

Near the start of each scenario, scientists launched a large balloon called a tetroon from one of a number of preselected sites. Some of these sites were adjacent to coal-fired power plants. The function of the large tetroon was to mark an air parcel that could be followed and sampled over several days as plumes from various sources merged to form a larger, regional air pollution mass. Scientists used transponders to help track the tetroon. These instruments work by detecting a pulse from radar in an area and then sending back a radio signal to technicians giving their approximate location. Observers at radar tracking centers, operated by the Federal Aviation Administration, in locations such as Cleveland, New York, and Washington, D.C. did the tracking.

The large tetroon was supplemented by smaller ones which could potentially be tracked for 250 kilometers. These were followed by mobile surface radar units. The multiple release of tetroons served to indicate changes in wind speed and direction with altitude as the power plant or urban emissions merged with emissions from other pollution sources.

In addition to monitoring the pollution episodes in the sky with radar and mobile ground units, scientists also used stationary equipment provided by a French concern. The team, which represented a Paris engineering firm, operated a device known as an acoustics doppler system at one of the ground sampling sites. The doppler system sends up sound waves and the frequency shifts in the echoes that return indicate the turbulence in the wind.

According to Dr. Francis Pooler, an EPA meteorologist, the first 24 hours of any of the sampling experiments were the most critical. During that period, scientists

must determine with the information gained the location, size, and movement of the air mass. Also, whether the pollutant levels were building up and whether a given power plant contributed to the pollution episode. If the answer is yes, then sampling continues in the area marked by the tetroon. Occasionally a second set of tetroons is released to ensure that air markers would be presented to guide the sampling aircraft to the parcel being measured.

### NEROS Experiments

The NEROS experiments were conducted under two scenarios designed for ozone modeling work. One scenario was designed to test the air over an area and consisted of repeated flights from Ohio eastward to the Atlantic with flights spaced out over a period of up to 48 hours.



*Aircraft prepare to track plumes of pollution in Northeastern U.S.*

The second scenario was designed for a more limited period and provided data on the dispersion and chemistry of plumes from the Columbus area. Occasionally the urban plume study was extended to follow the Columbus plumes and other plumes that merged with it to the Northeast corridor. At night airborne measurements of the urban plumes in Columbus were limited to helicopter flights, since the Federal Aviation Administration safety requirements precluded fixed wing flights below 1,000 feet, and the plumes generally hovered no higher than 600 feet.

Both large and small tetroons were released during the NEROS scenarios to serve as markers and to document the effect of the changes of the wind with height or the dispersion of the plumes or air masses being sampled.

It is estimated that it will take a year and a half to process the air pollution information from the project and make use of it.

Results of the pollution plume data from Philadelphia, Baltimore, Boston, New York City, Washington, D.C. and the Columbus study will then be used in EPA's regional air quality model program to determine the extent of regional pollutant flow on these Northeast corridor cities. These cities will then be responsible for running local scale models through their computers. The experiments should provide scientists with enough information to improve pollution control strategies for their respective cities. That information in turn, containing photochemical models on an urban scale, will be fed back into the regional air quality model being developed at an EPA facility in North Carolina.

By running the control scenarios through the regional model, Federal scientists hope to be able to eventually adjust the control measures for each city until the requirements of the ozone standard set by EPA are met. That standard now specifies that the one hour average ozone concentration can not exceed 0.12 parts per million more than one day per calendar year.

The six Federal agencies joining EPA in this summer's exercise were the National Oceanic and Atmospheric Administration, National Aeronautics and Space Administration, Federal Aviation Administration, Tennessee Valley Authority, National Science Foundation, and the Department of Energy's Argonne National Laboratory. Several private companies also participated in the study, among them Environmental Measurements, Inc., the primary contractor selected by EPA to conduct the study. In addition to providing the non-government aircraft used, they also maintained a weather briefing office throughout, using reports and analysis from the National Weather Service, including satellite pictures every half hour. The team also operated mission control facilities for actual conduct of experiments and operated mobile meteorological sounding units to measure wind and temperatures aloft together with a lidar van for ground based detection of aerosol structure aloft.

Universities involved in the study include Ohio State University, which provided housing for all of the participants as well as campus facility support; the University of Minnesota; Washington University at St. Louis, and Harvey Mudd College of California.

The Ohio Environmental Protection Agency provided laboratory facilities and space at its air monitoring lab in Columbus, as well as monitoring data from sites across the State. Monitoring data from other States was also obtained to assess the regional buildup of pollutants as episodes developed. □

*Valerie Whitney is an editorial assistant on the EPA Journal staff.*



## 1 REGION

### Conference Planned

A combined Minority Business Enterprise and Public Awareness Conference will be held Saturday, September 13, at the Lenox Hotel in Boston, Mass. The purpose of the conference is to stimulate interest in and public awareness of EPA's minority business enterprise policy in the construction grants and solid/hazardous waste disposal programs.

Specific problem areas that have been encountered by minority business enterprises will be discussed. In addition, a series of workshops, panel discussions, and technical assistance forums are planned to inform, clarify, and re-emphasize the goals and requirements of the program.

### Acid Rain

The Maine Natural Resources Council will hold a conference on acid rain November 22 and 23 in Portland, Maine. Co-sponsored by the International Atlantic Salmon Foundation and Trout Unlimited, the conference will highlight the environmental and economic effects on sports-fishing in the Northeast. Additional topics will include an overview of the nature and extent of the acid rain problem in the Northeast and Canada, and regulatory options.

## 2 REGION

### Transportation

Region 2 has proposed to disapprove the mass transit plan prepared for the New York Metropolitan area under the Federal Clean Air Act because the State, in EPA's view, has not yet met the Congressional mandate for a plan with appropriate measures to meet the City's basic transportation needs. The Agency also feels that the plan does not show that every effort is being made to provide the necessary funding for those measures.

"When it amended the Clean Air Act in 1977, Congress recognized how difficult it was for State and city officials to impose the tough transportation measures needed to reduce air pollution caused by motor vehicles and under certain conditions allowed extensions," said Charles S. Warren, EPA Regional Administrator.

"Congress also specifically provided an alternative to tolls on the East and Harlem River bridges. The State could eliminate tolls but in return must submit a plan showing how it would expand and improve public transportation to meet the basic transportation needs of the region. The plan was supposed to demonstrate that all available Federal, State and local funds would be used to meet those needs," he said.

"In our opinion, the State's plan for the metropolitan area does not meet that definition. In the meantime, the level of poisonous carbon monoxide and ozone caused by motor vehicles remains at twice the healthful level in many areas," Warren added.

## 3 REGION

### Scrubbers

A recently signed consent decree should resolve air pollution emission problems at the Philadelphia Electric Company's Eddystone and Cromby generating stations located near Philadelphia.

Under the decree, the company will continue a cleanup program originally begun in 1970. The program is designed to bring the coal-fired units at the two generating stations into compliance with sulfur dioxide, particulate matter, and visible emissions standards.

The utility is controlling air pollution through the use of emissions control devices known as "scrubbers." Special magnesium oxide scrubbers are being used to control sulfur dioxide. Magnesium oxide scrubbers differ from other scrubbers in that no waste sludge is created which would require landfilling facilities for disposal.

According to the newly signed decree, the utility must meet all emissions standards by December 31, 1982, though certain standards must be attained earlier at one of the Eddystone units.

The decree also calls for stricter interim standards to be attained before the scrubbers are in operation than were required under the earlier administrative orders.

### Air Pollution

The Department of Justice, on behalf of EPA, filed suit recently against Sharon Steel Corporation for polluting the air at the company's Farrell Works

in western Pennsylvania. EPA initiated the complaint after observing excessive visible emissions coming from the blast furnace at the Farrell Works. EPA had previously cited the company in September 1977 for air pollution.

## 4 REGION

### Reevaluation

Three proposed Interstate Highway 75 interchanges in the Miami-Ft. Lauderdale area are being re-evaluated by the Florida Department of Transportation at the request of Rebecca W. Hanmer, EPA Regional Administrator. Hanmer said the interchanges pose an indirect threat by encouraging growth and development which could harm the Biscayne Aquifer, the area's principal source of drinking water.

The reevaluation was agreed to in a memorandum of understanding signed by the EPA, the Federal Highway Administration, and the Florida Department of Transportation. None of the interchanges are under construction.

EPA agreed to stay its formal review of the I-75 project pending the outcome of the reevaluation, but reserved the right to reinstate such proceedings under authority of the Safe Drinking Water Act.

The highway is to run down the west coast of Florida to Naples, east into Broward County and then southeast to the Palmetto Expressway in Dade County.

## 5 REGION

### Cleanup Credits

The Illinois State Chamber of Commerce and EPA Region 5 were co-sponsors recently of a Chicago conference on the banking and trading of (air pollution) emission credits. This multi-State meeting brought together about 300 senior management and technical staff from industry and from State environmental protection and economic development agencies, as well as EPA personnel, to discuss concepts and procedures involved in controlled trading.

Among those who addressed the conference were William Drayton, Jr., EPA Assistant Administrator for Planning and Management, and Regional Administrator John McGuire. The general objectives of the conference were: to provide briefings and case study data on specific controlled trading activities in Region 5; to conduct State-specific briefings on controlled trading in the region; and to establish State and regional focal points for exchange of information and help in controlled trading.

Workshops were conducted on emission offsets, the bubble policy, and offset banking systems. These workshops were organized as panel discussions, with five speakers (one each from the region and the State, two industrial representatives, and one representative of the EPA headquarters controlled trading staff) participating in each panel, moderated by a representative of Region 5.

Separate meetings for each of the region's six



States were held to consider, with audience participation, the status of controlled trading within each State, the advantages and disadvantages of the system, and the need for follow-up meetings or assistance.



### Training Course

Region 7 with the assistance of Ecology and the Environment, Inc., an EPA contractor, recently sponsored the first combined local, State, and Federal level Hazardous Field Activities Course. The event took place at the Kansas City, Mo., Fire Department Training Academy.

The course, which included four days of instruction by nationally known experts in various disciplines and two days of "hands on" training, was designed to prepare personnel for involvement in hazardous chemical spill responses and investigations of hazardous waste dumps.

According to Bill Keffer, Chief of Region 7's Emergency Planning and Response Branch, this was the first time that regional resources had been used to provide practical training that had been requested by various area agencies.

Included among the participants were 60 students from Region 7, representatives from the U.S. Coast Guard, State environmental agencies in Iowa, Kansas, Missouri, Nebraska, various local government units and the private sector, such as the railroads.



### Cleaning Wastewater

A construction grant of approximately \$3.7 million has been given to the Upper Eagle Valley Sanitation District, which

serves the town of Vail, Colo. The grant will fund 75 percent of the cost necessary to enlarge and modify Vail's wastewater treatment plant which is posing a threat to Colorado's Gore Creek. For decades, the creek, which flows through Vail, has been the site of trout fishing.

Another important facet of the cleanup project will be control of sediment from non-point sources of pollution. Eagle County has passed and Vail is expected to pass laws which require sediment control measures be taken. These actions could include building a secondary drainage system, prohibiting construction of buildings close to the creek's banks, implementing erosion and stormwater control measures, and revegetating areas disturbed by construction.



### Radiation Policy

Members of the public and interested State and local officials commented on Federal radiation protection policies at a recent meeting in San Francisco of the President's Radiation Policy Council.

The meeting was one of five being held across the Nation to promote public involvement in the formulation of tasks to be undertaken by the Council.

The Radiation Policy Council, which is composed of members from 13 Federal agencies including EPA, the Nuclear Regulatory Commission, and the Department of Energy, was created this year to oversee the formulation and implementa-

tion of Federal policies related to radiation protection. EPA Administrator Douglas M. Costle is Council Chairman.

At the San Francisco meeting, the public was particularly invited to comment on three specific areas: occupational exposure to radiation, the control of naturally occurring radon in buildings, and problems related to low level radioactive wastes from research and medical facilities.



### Pollution Settlement

Three pulp mills in the State of Washington have agreed to pay substantial civil penalties to settle separate lawsuits brought against them by Region 10 for their failure to meet deadlines for achieving certain required levels of industrial wastewater treatment.

The three mills and the penalties are: Scott Paper Company, located in Everett, which has agreed to pay \$400,000; Georgia-Pacific Corp., in Bellingham, which agreed to pay \$250,000; and Weyerhaeuser Corp., in Longview, which agreed to pay \$135,000 in penalties.

At the time the suits were filed, a total of 28 other pulp mills in EPA's Northwest region (Alaska, Idaho, Oregon and Washington) had already complied with, or were on schedule to comply with, the effluent limitation required by their permits.

### Alaskan Permits

Region 10's proposal this summer to issue required Prevention of Significant Deterioration (PSD) and National Pollutant Discharge Elimination Sys-

tems permits set in motion the process by which final EPA approval can be given to the construction of a joint Arco-Sohio project at Alaska's Prudhoe Bay.

The permits are necessary before Arco-Sohio can build its planned "waterflood project," an effort that calls for flooding underground oil fields with purified seawater, thereby flushing out oil and gas that might not otherwise be recovered.

### States Served by EPA Regions

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**Region 10 (Seattle)**  
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206-442-1220





## Environmental Initiative

by Kenneth D. Lamm  
*Executive Director  
 Environmental Council of the States*

**M**y observation is that most of the change that occurred over the last twenty years has been done by leaders outside the political system. The civil rights movement, the women's movement, the environmental movement—all these were initiated and led by people outside the political system. The public leaders merely confirmed into law changes which had their genesis in sweeping value changes outside the political system: Politicians are by definition winners: we have seldom been leaders.

Secondly, the political system is by definition compromised. Government is a common denominator of all the values—right or wrong—farsighted or myopic—within it. Trudeau said it so well—"Politics deals with urgencies, not with essentials."

The environmental movement conversely deals with essentials—with some sweeping changes in lifestyles at a minimum—but more probably with a Hob-

sonian reality that is incompatible with political survival. This may be a new Garrett Hardin piece—"The Tragedy of the Common Politician"—but it is realistic. We can and do fight for liberalized abortion, family planning, mass transit, air clean up and a thousand similar important bandaids—but the system is clearly not capable of legislating solutions of world scarcity and limits. The politics of plenty were easy; the politics of scarcity are going to be tumultuous. How do you sell one half of a chicken in every pot?

Politics is fueled by good news, not bad. If it isn't good, we emphasize whatever good we can find. I coach my son's Little League team. We had a 5-5 season. Lost 5 at home and lost 5 on the road. I know some politicians who, if they were captain of the Titanic, would persuade the passengers they were only stopping for ice.

Any public official fears a public who, beset by inflation, shortages, scarcity and lower living standards, confuses the messenger with the message. Politics is In-



extricably interrelated with the management of expectations, and a society which has expanded economically and socially for 300 years will find sacrifice, belt tightening, and hard work a bitter pill to swallow. A call for "Blood, Sweat and Tears" requires exquisite timing and a political Dunkirk. Winston Churchill out of office *could describe and define a holocaust* much more accurately than F.D.R. in office, although both correctly perceived the true nature of the threat.

Thus are environmentally aware public figures caught—with our eyes on the horizon but our feet stuck in the reality, not so much of survival—that may or may not be important—but of effectiveness.

Al Smith said it so well: "A politician can't be so far ahead of the band he can't hear the music."

There are some messages that politicians can deliver—and some that await a freer agent—a Martin Luther King or an Amory Lovins or a Garrett Hardin. You need, I feel, a Gandhi, not a Governor to help you chart a strategy of the new world into which we are rapidly plunging.

To quote Walter Lippmann shortly before his death: "We are living through the closing chapters of an established and traditional way of life. We are in the early beginning of a struggle, which will probably last for generations, and that is to remake our civilization. It is not a good time for politicians, it is a time for prophets and leaders and explorers and inventors and pioneers and for those who are willing to plant trees for their children to sit under."

I would like to passionately reaffirm the validity of the goals of the environmental movement. Oliver Wendell Holmes said that "a person must get involved in the passion of his times, at the risk of never having lived." You have been involved in the passion of your times, pushing society toward eventually inevitable goals, and despite societal preoccupation with other more immediate issues.

We should take pride that we have correctly identified many major issues facing the world and done our best to articulate their seriousness.

With considerable accuracy you have been right. With remarkable accuracy we have identified the looming issues of our times: overpopulation; pollution; resource shortages; wise use of land; toxic and hazardous wastes; and geometrical growth.

Giscard D'Estaing recently summed it up with a quote that haunts me: "All modern day curves lead to disaster."

So first and foremost I believe we must have the courage of our convictions—an audacious faith in ourselves. History will confirm—I passionately believe—that we correctly identified the gargantuan problems of our age.

Second—with remarkable accuracy—we helped forge a body of laws, executive orders and administrative measures which withstood the test of times. We have faced the Nation in a new and needed direction and institutionalized a whole generation of solutions. They have to date withstood the test of time.

In our agenda for the 1980's, retention of what we have gained should be of utmost importance.

Third: we must admit that with all our efforts—successful as they were—the problems continue to outrun the solutions. We still live in a world which will see mega-famine, massive desertification, deforestation, a Niagara of Love Canals, toxic and hazardous, and nuclear management problems which eclipse any of our present solutions. We need a sense of strategy which should come out of this meeting but of which I can only vaguely see the outlines.

We must be both dreamers and realists: "both visionary and practical person. We must, in short, be a unique blend of Don Quixote and Sancho Panza. After the Don had attacked the windmills, mistaking them for evil giants, and had been rudely unhorsed for his pains, he picked himself up out of the dirt, announced to Sancho: 'I proposed to do such exploits that you shall deem yourself fortunate to have been found worthy to come with me and behold marvels that will be almost beyond belief.' To which Sancho replies: 'I believe everything that your Grace says; but for now tighten up your saddle a little, because you seem to be slipping off your horse.'"

We must be concerned with means, like Sancho, no less than with ends, like Quixote.

How we define the strategy clearly depends on how we define the problem and how we define the solution. I got into politics as an unpaid lobbyist fighting billboards. If our environmental problems are billboards and beauty, coyotes, coastlines, litter and landscapes, sprawl and snail darters, then our strategy is different than if we define our problems as overpopulation, overconsumption, overutilization of resources and system overload. The issue isn't scenery. It's survival.

I believe, sadly but realistically, that "All modern curves lead to disaster," and that we will see in our lifetime—indeed we

are presently witnessing—the beginning of a wrenching transition into a new world as different as the one Columbus discovered. I believe that a world of energy shortages, hunger, and natural resource limitation will soon be upon us.

We continue to assume that God is an American and ethnocentrically believe that the future will be an extrapolation of the past.

Senator Muskie said that the agenda for the 1980's must be to implement and understand the laws that we passed in the 1970's. He suggests sort of a period of consolidation for the environmental movement.

That would be good advice if these were normal times, but in my opinion we don't live in normal times and we don't have time for a period of consolidation. We have to fasttrack our solutions because the world is unraveling. The Government has a role in implementing the laws that you helped pass in the 1970's and you have the responsibility of developing the new values which we will need to carry us to the year 2000. It is our duty to articulate accurately the true dilemma of human existence. We must show that we cannot produce our way out of the current shortages; that we must help conserve our way out; that population is dealt with, not only by making more food, but by stabilizing population; that energy shortages will not be solved by merely drilling more wells, but by conservation and renewable resources; that resource shortages also must be worked on by recycling and reusing; and that growth-caused problems cannot be solved by merely more growth.

We must take a society raised on producing our way out of shortages and show them how we can help conserve our way out also. To a society that assumes infinite resources we must promote the finite.

In an important sense, we may not need more laws, but a spiritual revolution, an attitudinal revolution. We must take a society which has been built on the assumption of infinity and promote finity. Thus one of the foremost tasks of environmentalists is the development of a massive campaign of attitudinal change aimed at reversing the assumptions of infinity and to promote the recognition of scarcity and finiteness. □

*This article is excerpted from a speech by Governor Lamm to The Conservation Foundation's Environmental Decade Conference in Estes Park, Colo.*



### Leslie A. Carothers

She has been named Deputy Regional Administrator of EPA Region 1 headquartered in Boston. In this position Carothers will be responsible for overseeing the management of EPA activities in the six-state New England region.

Carothers has a strong environmental background. From 1976 until her recent appointment, she served as the director of the Enforcement Division of the Region 1 Office. In 1979 she was detailed for 3 months to EPA headquarters to serve as Coordinator of the Hazardous Waste Task Force. From 1974-1976 she served in the Office of General Counsel at EPA headquarters in Washington, D.C. as an attorney for the Air Quality, Noise and Radiation Division.

She graduated summa cum laude in government from Smith College and holds an L.L.B. from Harvard Law School. She also received a masters in environmental law from George Washington University in Washington, D.C.

Carothers replaces former Deputy Regional Administrator Rebecca Hanmer who is now the EPA Regional Administrator of Region 4, headquartered in Atlanta, Ga.

### Steven Schatzow

He has been appointed Deputy Assistant Administrator for Water Regulations and Standards. In this post, he will be responsible for developing regulations to control toxic indus-

trial pollutants and for formulating water quality criteria and standards. He also will supervise certain water monitoring operations and the wetlands protection program.

Schatzow had been EPA's Deputy Associate General Counsel for Effluent Guidelines since 1978. He joined EPA as a staff attorney in the Office of General Counsel in 1976. Prior to this, he was in private law practice in Washington, D.C. Earlier he was a consultant to the Canadian government for urban affairs and an attorney in the U.S. government's VISTA (Volunteers in Service to America) program.

He received a B.A. in English from Yale University, a law degree (J.D.) from the University of Chicago, and a master's degree (L.L.M.) in urban law from George Washington University.

### John S. Floeter

He has been named Assistant Regional Administrator for Planning and Management for EPA Region 6 with headquarters in Dallas, Tex. Floeter has 10 years' experience with the city of Dallas, where he most recently served as Assistant City Auditor. His experience includes work in the areas of personnel, grants management, program planning, and evaluation.

He received his B.A. from the University of Texas at Austin and did graduate work in Public Administration at Southern Methodist University.

### Laird Starrick

He has been named Director of the Region 5 Analytical Center. The centers will focus on policy analysis and development concerned with major "cross-cutting" (i.e. transcending organizational or functional lines of authority) issues of high priority to EPA and to individual Regional Administrators.

The Region 5 Analytic Center has been formed to analyze

and develop policy; assist Region 5 divisions and branches in policy analysis and development; conduct analysis of projects of potential use to other EPA regions; and participate in analysis of projects of outside organizations which are of great interest to EPA Region 5.

Starrick comes to EPA from the Department of Commerce and Community Affairs of the State of Illinois, where he had been Director of Policy and Programs since October, 1979. Prior to that, he held various positions in State government.

He received his bachelor's degree in 1967 and his master's degree in 1972, both in urban and regional planning, from the University of Illinois.

### George V. Bochanski, Jr.

He has been named Chief, Office of Public Awareness, at EPA's office in Philadelphia. He will be responsible for directing Region 3's public awareness, public participation, and press services programs.

Before being appointed to his new position, Bochanski was Press Officer in Region 3 for two years. He also worked in various public information capacities for the Department of the Treasury and the Department of the Army for nine years. Prior to joining the Federal Government, he was a news reporter for several Philadelphia area radio stations.

He received B.S. and M.B.A. degrees from St. Joseph's University in Philadelphia.

### James Thompson

He has been named Regional Counsel for Region 8. In that position, he is the senior legal advisor in the Region and provides overall legal and policy advice to the Regional Administrator and other senior staff members. He also represents the Office of the General Counsel on the Agency's Indian Task Force.

Prior to coming to Region 8, Thompson was Assistant Regional Counsel in Region 1 from 1974 to 1979. Before that he was an attorney-advisor in the Region 1 enforcement division.

He graduated from the University of Pennsylvania in 1967 and received a law degree from George Washington University in Washington, D.C., in 1973.

### Robert E. Hall

He was recently installed as Chairman of the Air Pollution Control Division of the American Society of Mechanical Engineers (ASME) at its annual meeting in Montreal, Canada. He is a program manager at the EPA's Industrial Environmental Research Laboratory in Research Triangle Park, N.C.

The Society Air Pollution Control Division currently has 800 members representing a wide range of governmental, industrial, and academic organizations. The American Society of Mechanical Engineers is an educational and technical society of some 90,000 engineers.

Hall has been with EPA since its formation 10 years ago. Prior to that time, he worked with the U.S. Public Health Service and the U.S. Navy. He holds both a bachelor's degree and master's degree in mechanical engineering from the University of Kentucky.

### Dr. Edward G. Bobalek

He has been named a Fellow of the American Institute of Chemical Engineers. Bobalek is a senior chemical engineering advisor at EPA's Industrial Environmental Research Laboratory in Research Triangle, Park N.C.

Bobalek has been on a special intergovernmental exchange program. He is on leave from the University of Maine in Orono, where he is a Gottesman Research Professor and head of the Chemical Engineering Department. He will be returning to the University in September.



## News Briefs

### U.S., CANADA AGREE ON ACID RAIN

The United States and Canada have signed an Agreement that initiates a comprehensive program to develop solutions to the acid rain problem. Major provisions of the Agreement include: establishing a formal coordinating committee to begin negotiations by June 1, 1981, on a cooperative agreement to control drifting air pollution; vigorously enforcing existing air pollution controls; and providing advance notification on industrial or regulatory developments relating to the acid rain problem. This Agreement, a Memorandum of Intent, was signed by Secretary of State Edmund Muskie and EPA Administrator Douglas M. Costle for the United States, and by Canadian Ambassador Peter Towe and Canadian Minister of the Environment John Roberts for Canada. In signing the Memorandum, Secretary Muskie pointed out that the Agreement responds to the 1978 Congressional resolution calling for U.S.-Canadian negotiations to preserve and protect mutual air resources.

### COSTLE WARNS ON CHEMICALS

The legacy of the chemical revolution will present this country with its biggest environmental problems, according to EPA Administrator Douglas M. Costle. He discussed the environmental future of the U.S. in a recent appearance on NBC-TV's "Meet the Press." "We have been pumping hazardous wastes and chemicals into the ground for years in this country," said Costle. "We're going to see it start turning up in the drinking water." Discussing recent studies investigating links in growth of cancer incidence to exposure to toxic chemicals, he said, "I think there is mounting evidence that suggests that they are clearly implicated in it, but the degree to which they are is in many cases still unclear. It's an infant science. But it's an absolutely critical area, and my hunch is that we're going to find it to be a more serious problem than we ever imagined."

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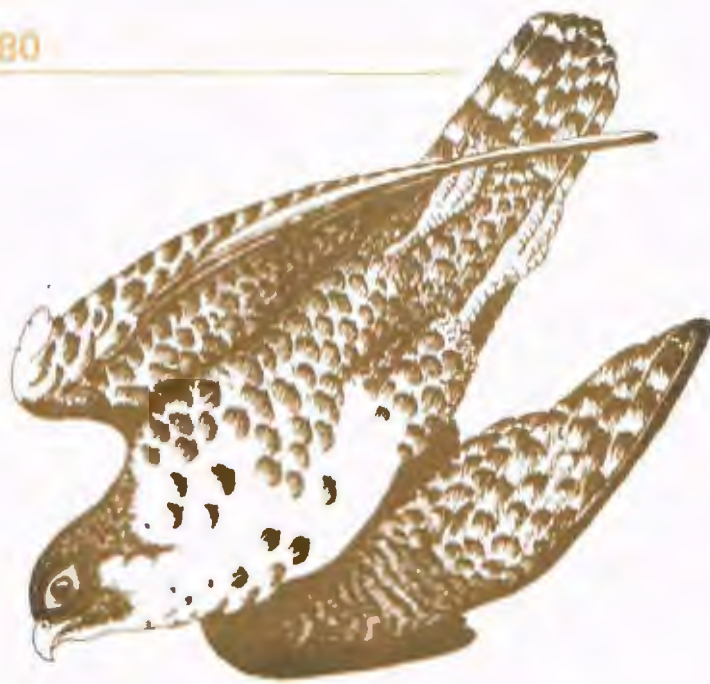
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# Falcons on the Wing



**A**s dawn breaks over Washington a peregrine falcon rises from a tower of the Smithsonian Institution's Castle Building, circles the area, and then dives with blazing speed on a pigeon flying nearby.

The falcon makes a fist of its claws and strikes its victim with such force that a cloud of pigeon feathers goes flying. The peregrine then makes a reverse turn and catches the pigeon before it hits the ground.

By the time the morning rush hour traffic begins to rumble by the Smithsonian on the way to downtown offices the falcon is back at its tower perch plucking and eating its breakfast.

Six young falcons were taken to the Smithsonian earlier this year as part of a major program to help restore the peregrine in the East. The falcons at the Smithsonian are expected to migrate this fall but may return to nest in three years when they reach sexual maturity.

Four young falcons were raised on the roof of the Department of the Interior headquarters in Washington last year, but after leaving on migration one was shot in New Jersey and another crashed into a building in Baltimore. Interior officials are hoping that the remaining two will return to nest next year.

Meanwhile, four more peregrine chicks were recently taken to a box nest on the roof

of a Manhattan skyscraper in an attempt to restore this bird to New York City. Attempts to rear peregrines are also being made in other large cities.

The decline of the peregrine has been attributed to the effect of the pesticide DDT on the species. By 1970 when most uses of DDT were banned by EPA, Dr. Thomas Cade of Cornell University had started a large-scale captive breeding program at Cornell. The nestling falcons bred by peregrines in captivity at Cornell's Behavioral Ecology Facility, known as the "hawk barn," are taken to suitable locations around the country and released.

One problem has been that since the eastern subspecies of the peregrine became extinct, great horned owls have taken over many of the cliff ledges where the falcons used to nest.

Young falcons are not strong enough to defend themselves against these predatory owls which attack at night. At some cliffside sites attempts to release the peregrines have had to be abandoned when some of the fledglings disappeared and later their severed legs and feathers were found at the base of the cliff.

As a result, scientists decided to experiment with the restoration of peregrines to large cities where tall buildings and an ample food supply of starlings, pigeons and sparrows

used to provide good habitats for peregrine falcons.

Although some people have expressed concern about the falcon's victims, scientists estimate that a healthy young peregrine will eat a maximum of about two pigeons a day, probably less than are killed daily in urban traffic. Some city officials have wondered if falcons could help reduce excessive starling populations.

The peregrine restoration program is sponsored by the U.S. Fish and Wildlife Service, the Cornell University Peregrine Fund, and various other groups. The eggs to start the program were obtained from natural nests, or eyries, and then hatched in incubators at Cornell. When an egg is removed from a nest in the wild it is replaced with a dummy egg and later a nestling raised at Cornell is sometimes substituted for the artificial egg and raised by the unsuspecting parent birds.

When parents are not available the birds are taken in a protective crate, or hack box, to a mountain ledge where they can remain in the safety of the box and be fed by remote control until they have "fixed" on their wild surroundings. The box is designed to allow parentless birds to fledge safely in the wild without imprinting on human beings. The term "hack" comes from the practice in the ancient art of falconry of feeding the young bird at a tree

stump or hack board. Although the bird is free to fly it depends on the hack board for food.

When the bird reaches the stage of being able to capture its own prey, the falconer recaptures the fledgling and attaches jesses—straps on the legs to which a leash can be attached.

Under the restoration program, which has resulted in the release of several hundred captive-bred birds, the fledglings are released to the wild instead of being leashed.

In addition to the fact that peregrines are majestic and fascinating birds capable of flying at speeds of approximately 200 miles an hour while diving, they deserve our attention because they are part of the life on this planet that is inextricably linked.

As Rene Dubos, the noted scientist and author, has written, "the only real clue to the origin of life is that all its forms . . . have many physiochemical characteristics in common." Dubos added that "this uniformity of fundamental structure holds true irrespective of the size, shape and complexity of the organism—whether it be microbe, plant, animal or man.

"Indeed, the similarity in structure of the genetic apparatus throughout the living world is so perfect that it cannot possibly be a matter of chance. The conclusion seems inescapable that all the living forms that now exist have had a common origin."—C.D.P. □





## Global Danger Signals

*Continued from page 7*

safely storing nuclear wastes from power reactors remains unresolved.

One of the goals of the study was to show how global problems are related to each other, and it furnished several striking examples of this. In warning that the world faces a loss of many plant and animal genetic resources—between 15 and 20 percent of all species on earth—within the next two decades, the report pointed out that up to two-thirds of these extinctions will result from the destruction or degradation of tropical forests. Many other freshwater and marine species are threatened with extinction by dams, channels, silt, and pollution by salts, acid rain, pesticides and other toxic chemicals, according to the study.

In summary, the picture painted by the study of the world in the year 2000 is not an optimistic one. There will be many more people. Four-fifths of them will live in less developed countries. The gap between the rich and poor will increase. There will be fewer resources to go around. In the

last quarter of the 20th century, remaining petroleum resources per capita will decline at least 50 percent, water supplies per capita will drop 35 percent, and growing stock of wood will decline 47 percent. By the end of the century, 40 percent of forests remaining in lesser developed countries will have been razed. Soil erosion will have washed or blown away on the average several inches of topsoil from croplands around the world. Desertification may have claimed a significant part of productive land. At least 500,000 species of plants and animals will have become extinct in little more than two decades.

It is obvious from the tone of the report that the authors, while terming it as no more than "a reconnaissance of the future" and a description of what is likely to occur rather than a firm prediction, are using the occasion as a call to action. They warn that there is no technological "quick fix" for the problems.

Gerald O. Barney, study director, believes that among the immediate results of the findings, the Department of State will soon organize an international conference as a follow-up to the warnings. "This is the first study of its kind that any

Goats forage high in a tree in Tunisia where overgrazed lands can no longer provide food. (Articles on p. 6 and p. 20)

**Back Cover:**  
Agostie Islands National Lakeshore on the Wisconsin side of Lake Superior. The Lakeshore was established by Congress in 1970. (Article on p. 15)

nation has done where an attempt was made to look at population, resources, and environment and how their problems are interrelated," he said. "A great many people are reflecting on the subject both here and abroad, and the study comes at a time of increasing stress."

Copies of the full Global 2000 Study are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 or any GPO bookstore. The Summary Report (S/N 041-011-00037-8) is \$3.50, Vol 2 The Technical Report (S/N 041-00038-6) is \$13, and Vol 3 The Government's Global Model (S/N 041-011-00051-3) is \$8. □

*Truman Temple is Associate Editor of EPA Journal.*

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