

EPA JOURNAL

Earth Day 1995—the 25th Anniversary



The Earth is in your hands...

United States
Environmental Protection Agency

Carol M. Browner
Administrator

Communications, Education,
and Public Affairs

Loretta M. Ucelli
Associate Administrator

Miles Allen
Director of Editorial Services

Karen Flagstad, Ph.D.
Senior Editor

Catharina Japikse
Assistant Editor

Ruth Barker
Photo Editor

Nancy Starnes
Assistant Editor

Marilyn Rogers
Circulation Manager

Francheska Greene
Intern

Leighton Price
Editorial Consultant

Design Credits
Ron Farrah
James R. Ingram
Robert Flanagan

Front cover: EPA Administrator
Carol Browner and friends at
"Early Environments," EPA's day care
facility for children of employees.

Steve Delaney photo. EPA.

A Magazine on National and Global Environmental Perspectives
Winter 1995 • Volume 21, Number 1 • EPA 175-N-95-001

From the Editors

On a fine April day 25 years ago, some 20 million Americans took part in the first Earth Day. The turnout exceeded even the best hopes of those involved in planning the event, including then-Senator Gaylord Nelson, who conceived the idea of a nationwide Earth Day. Earth Day—April 22, 1970—was an unprecedented show of support for environmental causes that reverberated from the streets to Capitol Hill. According to historians of the environment, it was also a turning point—a watershed event marking the advent of environmental issues on the national agenda. From the momentum of Earth Day came the passage of environmental statutes and the December 1970 creation of EPA as a federal agency.

This coming April 22 marks the 25th observance of Earth Day, an anniversary which occasions this issue of *EPA Journal*. As Earth Day 1995 approaches, once again we are at an important juncture, a time when national priorities are being reexamined in light of fiscal austerities. Earth Day 1995 is thus a time for reflection and assessment as well as a time for renewed commitment to environmental citizenship for individuals and nations.

From EPA's standpoint, this anniversary is a time for taking stock of environmental accomplishments over the last 25 years and for sizing up the work that remains to be done and how to do it most effectively and economically. From that perspective, in this *EPA Journal* some of the connections between environmental protection, economic considerations, and public priorities are explored in a feature called "Environmental Protection: Is the Public Willing to Pay?"; the feature is based on a forum discussion in which current Administrator Carol M. Browner joined several former EPA administrators at Harvard University's John F. Kennedy School of Government last December. Several articles in the issue look to the future, including Raymond Loehr's article on trying to anticipate environmental problems for the purposes of pollution prevention ("Looking Ahead to the Planet's Future").

Last but not least, Earth Day 1995 is a time for celebrating the resources of the Earth. It is a time for renewed environmental stewardship on the part of all citizens. For truly, the Earth is in your hands. □

EPA JOURNAL Subscriptions

The annual rate for subscribers in the United States is \$7.50. The annual rate for subscribers in foreign countries is \$9.40. The price of a single copy of *EPA Journal* is \$3.25 in United States and \$4.06 if sent to a foreign country. Prices include mailing costs. Subscriptions to *EPA Journal* as well as other federal government magazines are handled only by the U.S. Government Printing Office. To subscribe to *EPA Journal*, send a check or money order payable to the Superintendent of Documents. The requests should be mailed to: P.O. Box 371954, Pittsburgh, PA 15250-7954. To change address, call or write: The U.S. Government Printing Office, Public Documents Department, Superintendent of Documents, Washington, DC 20402; (202) 512-2262. *EPA Journal* is printed on recycled paper with vegetable-based inks.

Be nice to yourself, or to someone else special

The \$7.50 Gift that
keeps right on giving!



INFORMATION, NEWS, TRENDS, ISSUES, VIEWPOINTS, PEOPLE, POLICIES,
AND PROGRAMS —from local to global

If you are currently a subscriber, you know how the special people on your list, friends, college students, or family members, will appreciate your thoughtfulness in sending them a gift subscription to **EPA JOURNAL**.

If you're not a subscriber, it's about time you were nice to yourself.

What else can you give or receive that comes four times a year, is dedicated to making ours a better world, and is ONLY \$7.50? **EPA JOURNAL** makes for an imaginative, educational, year-round gift and is a real bargain, too!

Simply check the boxes on the other side and fill in the name and address of the person you want to receive a subscription.

MORE THAN ONE? You can copy and fill out the reverse side of this card for as many subscriptions as you wish to give.

WINNER! **EPA JOURNAL** took FIRST PLACE in the 1991 "Blue Pencil Competition," a prestigious Award that makes a subscription even more valuable.

EPA JOURNAL ORDER FORMOrder Processing Code * **5401**

☐ **YES**, enter ____ subscriptions to **EPA JOURNAL** for \$7.50 per year (\$9.40 foreign).
The total cost of my order is \$ _____. Price includes regular domestic postage
and handling and is subject to change.

Company or personal name

Please type or print

Additional address/attention line

City, State, ZIP Code

Purchase Order No.

Daytime phone including area code

May we make your name/address available to other mailers?

☐ **YES**☐ **NO****Please Choose Method of Payment:**☐ Check payable to the Superintendent of Documents☐ GPO Deposit Account ☐ Visa or MasterCard Account Credit card expiration date

To fax your orders (202) 512-2233

Mail to:

New Orders

Superintendent of Documents

P.O. Box 371954

Pittsburgh, PA 15250-7954

Thank you for your order!_____
Authorizing Signature

This form may be photocopied.

Articles

- 4** **The Earth is in Your Hands**
by Carol M. Browner
- 7** **EPA Earth Day Contacts**
- 9** **Earth Day 25 Years Later**
by Gaylord Nelson
- 11** **Environmental Protection: Is the Public Willing to Pay?**
A Forum
- 17** **What Voters Say About the Environment Today**
by Bill Line
- 18** **Good News for Waste Watchers**
by Roy Popkin
- 20** **Experienced Help for the Environment**
by Tom Benjamin
- 22** **Looking Ahead to the Planet's Future**
by Raymond Loehr

Departments

- 2** **EPA ROUNDUP**
- 26** **HABITAT**
Anishnabe: The Original People
Poetry from Charmaine Benz
- 27** **CROSS CURRENTS**
A New Back-Yard Ecology
From Noah's Garden by Sara Stein
- 29** **FOR THE CLASSROOM**
You Can Make a Difference . . .
- 31** **ON THE MOVE**
- 32** **LIST OF CONTRIBUTORS**

Special Insert

- 33** **Creating a Healthier Environment:**
How EPA Works for You

EJED
EPA
175/
N-95
-001

#44596391

OCT 4 2000

23



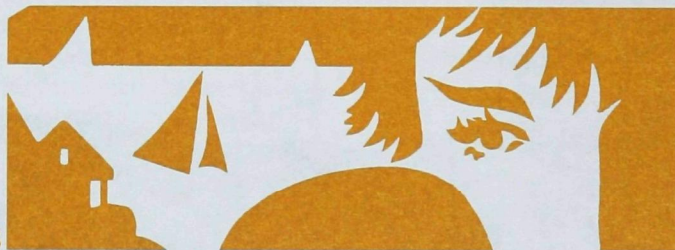
5



12



33



U.S. EPA
OPPTS Chemical Library
401 M St. SW, MC7407
Washington, D.C. 20460
(202) 260-3944

The U.S. Environmental Protection Agency is charged by Congress to protect the nation's land, air, and water systems. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions which lead to a compatible balance between human activities and the ability of natural systems to support and nurture life. *EPA Journal* is published by EPA. The Administrator of EPA has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Agency. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget. Views expressed by the authors do not necessarily reflect EPA policy. No permission needed to reproduce articles except those showing a specific copyright claim; no permission needed to reproduce photos credited to EPA. Contributions and inquiries are welcome and should be addressed to: Editor, *EPA Journal* (1704), Waterside Mall, 401 M Street, SW, Washington, DC 20460.

TRI List of Chemicals Nearly Doubled

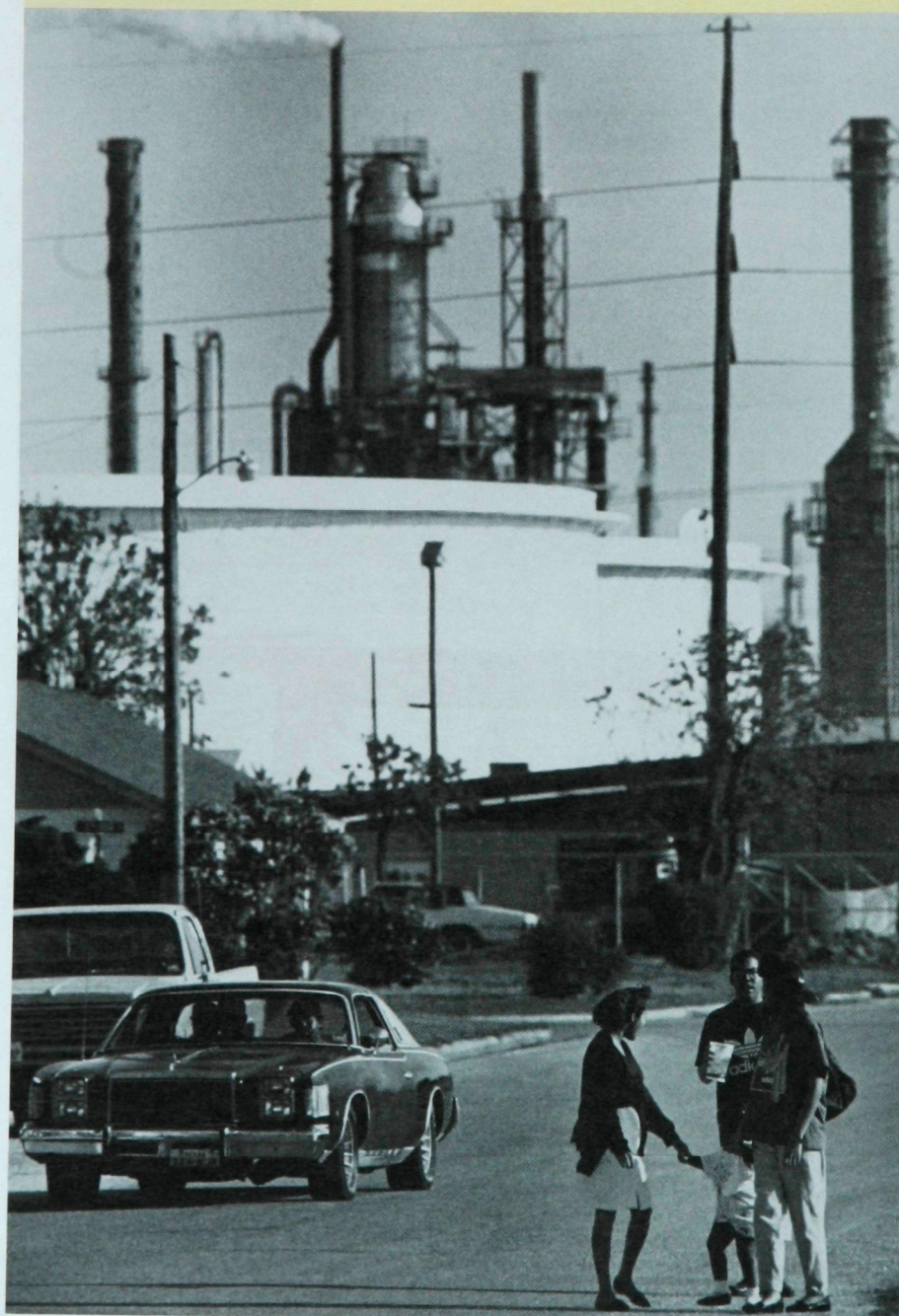
In a final rule, EPA has expanded the Toxic Release Inventory (TRI) to include an additional 286 chemicals. Companies must report annually any release to the environment (or transfer off site) of those chemicals listed on the TRI, which was established under the Emergency Planning and

Community-Right-to-Know Act. The expansion brings the total number of listed chemicals to 654, effective January 1, 1995. Administrator Carol Browner said: "This vital information about pollution in our communities allows citizens to be informed and involved in environmental decision making as never before. Community-

right-to-know laws are a common-sense way to protect public health, and I encourage citizens to use the data to work with local facilities to address pollution issues in their communities." EPA publishes TRI data in several formats, including on-line access to computer databases, CD-ROM, and computer diskettes. For general informa-

tion on access to any data formats, call 202 260-1531. EPA also maintains a technical hotline to help the public understand TRI reporting at 800 353-0202. EPA also has made it easier for small businesses to comply with TRI reporting requirements by allowing them to use a shorter, less time-consuming report form.

The Washington Post reported: "... Private industry had expected the broadening of the so-called Toxic Release Inventory, a community right-to-know program enacted by Congress in 1986. The EPA proposed expansion 18 months ago. ... At the same time, the EPA said it was making it easier for small businesses to comply with reporting requirements by allowing them to use a shorter, less time-consuming reporting form. The shorter forms may be used if a company released less than 500 pounds of a chemical. ... Environmentalists have argued for some time that more chemicals should be covered by the reporting requirements, which apply to more than 23,600 factories and plants nationwide. They also have criticized the law for not requiring release data from incinerators, electric power plants and other facilities. In April, the EPA said chemical plants and other



Sam Kittner photo Copyrighted

EPA's Toxic Release Inventory gives citizens access to information on chemical releases in their communities.

Ongoing Enforcement

factories reported 3.2 billion pounds of toxic chemical releases in 1992, a 6.6 percent decline from the previous year. The 1992 figures are the latest available. Among the releases were 197 million pounds of known or suspected cancer-causing chemicals and 166 million pounds of chemicals that damage the earth's protective ozone layer. Of the 3.2 billion pounds of chemicals released, nearly 58 percent went into the air, 10.8 percent was deposited on land, 8.6 percent was discharged into water and 22.8 percent was injected deep into the ground."

The Wall Street Journal said: "... The regulation, which will take effect Jan. 1, will substantially increase reporting requirements for pesticide manufacturers and processors under the 1986 Emergency Planning and Community Right-to-Know Act. The list is slightly smaller than the one proposed in January, however. About half of the chemicals on the new list are pesticides. The EPA last January proposed expanding the so-called Toxic Release Inventory by 313 chemicals. Some chemicals were dropped and other listings were deferred because of technical questions, so that the final additions number 286."

Stop Sale Ordered on Drinking Water Filters

EPA has revoked the registration and has prohibited the further sale and distribution of two drinking-water filters manufactured by AccuFilter International of Beaverton, Oregon. The devices consist of a straw and a bottle, each of which is equipped with a silver-impregnated activated-carbon filter designed to remove sources of odor and taste. The Agency has determined that data submitted by AccuFilter in support of its application for registration was false: Data from the actual laboratory tests of the filters showed a higher level of silver released into the water than did the submitted data. The principal owner of AccuFilter, Bruce G. Spangrud, has been indicted by a federal grand jury on felony charges that he submitted false statements to obtain an EPA pesticide registration. A criminal trial has been scheduled in the Federal District Court in Portland.

Excessive exposure to silver can cause argyria, a permanent discoloration of the teeth and skin. While not a toxic effect, argyria is an undesirable cosmetic change. EPA is also concerned that advertisements for the two filters may lead consumers to believe the devices can purify raw water, when they cannot—the registration, now revoked, was for use with potable water only. The Agency recommends that consumers stop using any of the filters in their possession and dispose of them.

Manufacturer Fined \$1.5 Million in Death of Two Boys

A federal district court judge in Tampa, Florida, has imposed a \$1.5 million criminal fine, the maximum allowable penalty, on the William Recht Company, Inc., for violations of the Resource Conservation and Recovery Act (RCRA) that resulted in the death of two nine-year-old boys. The judge also placed the company on probation for five years and ordered an environmental education program for employees. The company, which does business in Tampa as Dunex Industries Inc., manufactures rollers for the printing industry. The two boys, who had been playing in the company's trash dumpster, were overcome by fumes from toluene, a liquid used by the company as a cleaning agent. Investigation revealed that the company routinely—and illegally—disposed of spent toluene in the dumpster. Last year, a federal grand jury indicted the company, plant manager William Whitman, and shop foreman Duane Whitman for illegally treating, storing, and disposing of hazardous waste without a permit and for knowing endangerment. The company entered a no-contest plea to the indictment. The Whitmans were subsequently convicted by a jury on the first count but acquitted on the second—knowing endangerment; each was sentenced to 27 months in prison.

Tug Captain Guilty in Puerto Rican Spill

Roy A. McMichael Jr., captain of the tugboat *Emily S.*, has pleaded guilty in U.S. District Court, San Juan, Puerto Rico, to negligently letting a barge break loose and run aground to spew heavy fuel oil into the waters off a popular beach. *Emily S.*, with the *Morris J. Berman* under tow, was underway at night from San Juan to Antigua when its towing cable parted, was repaired, then parted again. With the second break in the cable, the barge drifted out of sight and could not be found with searchlights and radar. It ran aground off Escambron Beach to discharge 750,000 gallons of Number 6 oil into the water. According to the Department of Justice and EPA, Captain McMichael knew the towing cable was in poor condition but failed to replace it before departure. He also failed to notify the Coast Guard that the *Morris J. Berman* had broken loose and was adrift. Under the Federal Water Pollution Control Act, he is subject to a maximum sentence of one year imprisonment and a fine twice the amount of the monetary loss, which is estimated to be in the millions of dollars. □

The Earth is in Your Hands

Working together, we can achieve a new generation of environmental protection

by Carol M. Browner

*It is the job of
government to protect the
public. But government
cannot do the job alone.*

Earth Day 25 is a time to reflect on how we're doing in protecting our environment. Twenty-five years ago, in the wake of the first Earth Day, our nation created, virtually from scratch, the most advanced system of environmental protection in the world. In the course of a very short history—a mere quarter-century—we have made tremendous progress. We no longer have rivers catching on fire. Our skies are cleaner. And U.S. environmental expertise and technology are in demand throughout the world.

In the years since the first Earth Day, EPA banned lead in gasoline, lowering lead levels in our air by more than 90 percent and protecting millions of children from harm. We banned dangerous and widely used pesticides like DDT. We closed unsafe local garbage dumps all over the nation and helped to make recycling a household habit. We provided American towns with substantial funding for wastewater treatment—the second biggest public works effort in U.S. history, resulting in cleaner rivers all over the United States. All cars and trucks now have standards for fuel economy, set by EPA, that allow consumers to choose a car for its energy efficiency. And EPA has played an important role in ensuring that companies and others comply with our environmental laws or face stiff penalties.

Perhaps most important, the nation has gained a new understanding. More Americans than ever understand that to ensure a good quality of life for ourselves and our children, we must act as responsible stewards of our air, our water, and our land.

More to Do

But much remains to be done.

Thirty years after Rachel Carson warned us in *Silent Spring* to reduce our dependence on pesticides, we have doubled our pesticide use. Twenty-five years after the garbage-filled Cuyahoga River spontaneously caught on fire, 40 percent of our rivers and lakes are not suitable for fishing or swimming.

In 1993, people in Milwaukee, New York, and Washington, DC, were ordered

to boil their drinking water. In Milwaukee, hundreds of thousands of people got sick from contaminated water; 100 died. Twenty years after passage of the Clean Air Act, two in five Americans still live in areas where the air is dangerous to breathe. Fourteen years after Love Canal, one in four Americans lives within four miles of a toxic dumpsite. Asthma is on the rise. Breast cancer is on the rise.

And the past 25 years have left us with a complex and unwieldy system of laws and regulations and increasing conflict over how we achieve environmental protection.

The result of this history? An adversarial system of environmental policy. A system built on distrust. And too little environmental protection at too high a cost.

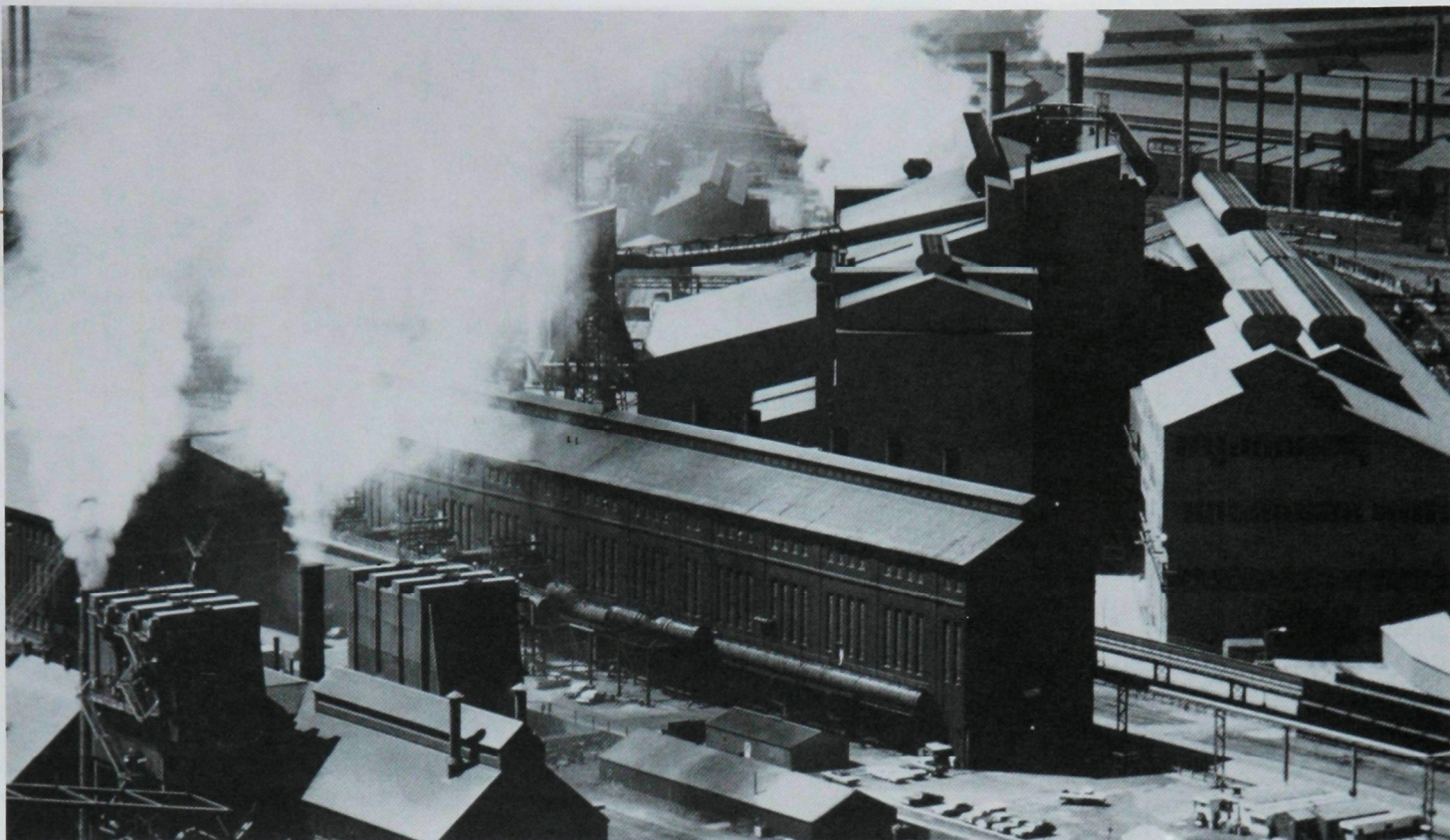
The Challenge We Face

In the next 25 years, we must maintain the progress we have made, and we must build on that progress. We must continue to protect the health of the people of this country, the health of our communities, the health of our economy, our air, our water, and our land.

The environmental problems of the future will be more complex than ever. We can work together to address these problems today, or we can handle them as expensive crises tomorrow.

When President Clinton and I arrived in Washington two years ago, we believed that we needed a fundamentally new system of environmental protection. One that protects more and costs less. And one that builds on the strengths of the last 25 years but overcomes the deficiencies of the past.

We have an opportunity to reinvent a system of strong public health and environmental protections—to find solutions that work for real people in real communities. We must do it with common-sense, cost-effective measures that produce the very best environmental results for the least cost. In this new system, we need a firm commitment to public health and environmental goals—combined with flexibility, innovation, and creativity in how we achieve those



Prompted by a June 1973 enforcement action, this Gary, Indiana, steel plant reduced its emissions to comply with the Clean Air Act.

Sewage-disposal problems triggered this 1962 protest in Scottsdale, Arizona. Aided by EPA funding, towns across America have built wastewater-treatment plants.

goals. We must move beyond the one-size-fits-all approach of the past. We must work industry by industry, community by community to *prevent* pollution, rather than clean it up after the fact. We must involve those who will live with environmental decisions, to ensure that they have every opportunity to be a partner in making those decisions.

New Strategies for the Future

In the last two years, the Clinton Administration has initiated a variety of strategies to reinvent environmental protection—to move beyond a one-size-fits-all approach and move toward a flexible yet firm approach to pollution protection. These strategies will allow us to achieve results that are cleaner, cheaper, and smarter.

Last year we launched the Common Sense Initiative, a fundamentally different way of doing business that takes us



beyond the pollutant-by-pollutant, crisis-by-crisis approach of the past to an industry-by-industry approach for the future. Beginning in six industries, we are bringing together leaders of business, state and local government, the community, labor, and the environmental movement—to sit down and examine environmental protection in these industries from top to bottom.

By working together, we will be able to find answers to the tough questions and arrive at solutions never before thought possible—solutions that will be cleaner for the environment, cheaper for the taxpayer and industry, and smarter for the future of this country.

Through our Brownfields Action Agenda, we are working in partnership with state and local government, communities, industry, and small business, to clean up the contaminated pieces of land that sit idle in cities across this country—to bring them back to life, to remove a blight on the neighborhood, to create jobs, to create hope. We recently lifted the Superfund stigma from 25,000 sites around this country.

Recognizing the need for quality science in all that we do, we recently launched our STAR program—Science To Achieve Results—bringing the best and the brightest from across the scientific community to assist us in our work, so we can direct our resources to the highest risks and do it using the highest quality data. Five thousand graduate students in science are competing for 100 fellowships in research at EPA. We've expanded our use of risk assessment and cost-benefit analysis. In fact, the National Academy of Sciences has recognized EPA as a world leader in using risk analysis.

These are some of the strategies we are using to reinvent environmental protection. All of these strategies work for business, for communities, and for people across the country. All of these are new strategies that will take us to the future.

We Must Reinvent, Not Repeal

Last month, the President, the Vice President, and I announced the Clinton Administration's regulatory reinvention of environmental protection. Through a package of important reforms, we will trust honest business people as partners, not adversaries—without sacrificing one ounce of public health protection.

We will cut paperwork by 25 percent, saving 20 million hours a year for

business and communities. Time and money should be invested in making a product, not filling out forms.

We will allow a six-month grace period—to give small business owners a chance to fix compliance problems instead of paying a fine. We will reward companies that take responsibility for finding and fixing environmental problems. Our goal is compliance with the laws that protect public health and the environment—not punishment.

We will institute one-stop emissions reporting and consolidate our air-pollution rules. Instead of a dozen different rules and a dozen different forms, our goal is one rule, one permit, one report.

Under our new Project XL—excellence and leadership—we will choose 50 businesses and communities and say to them, "Here's the pollution reduction goal. You know your operation better than anyone else. If you can figure out how to reach the goal and exceed that goal, then you can throw out the rule book."

Through the Clinton Administration's regulatory reinvention, we are refining environmental protection to make it more flexible, more effective, more sensible, and more affordable—to achieve the very best environmental results for the least cost.

These reforms will move us beyond

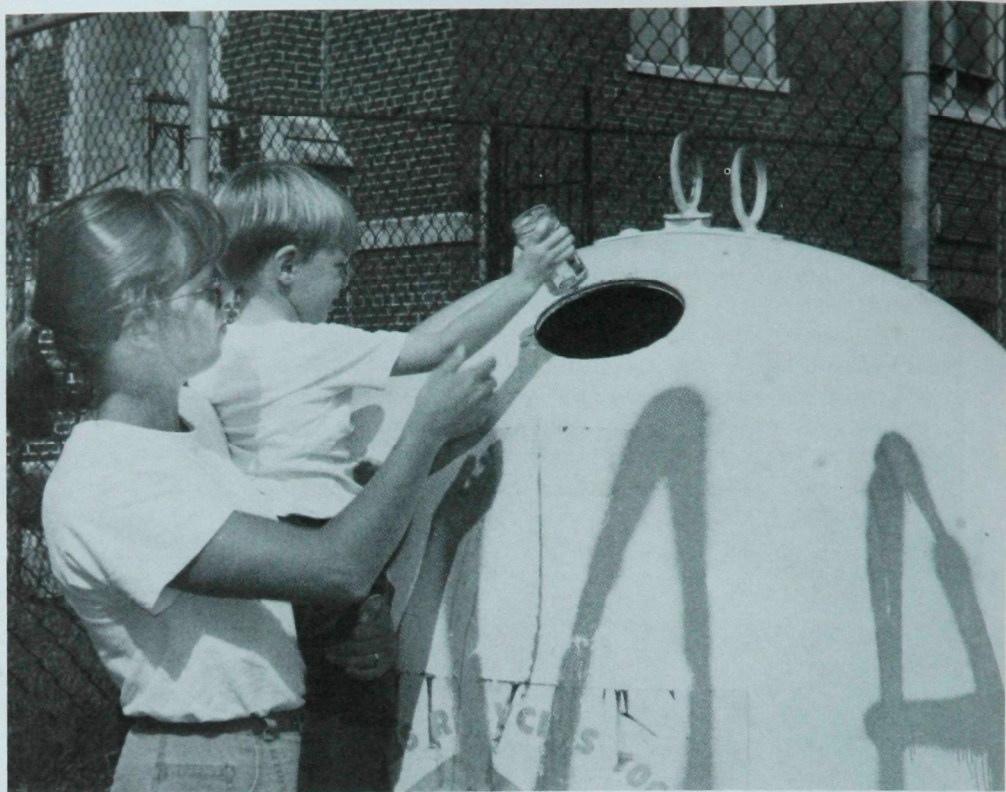
rigid, one-size-fits-all regulation. But unlike proposals for regulatory reform being debated in Congress, these reforms do not cross the line to one-size-fits-all deregulation.

We need to reinvent environmental regulations—not repeal public health protections. The Clinton Administration's regulatory reinvention will help us work together to protect our health and our environment—and do it through common-sense, cost-effective measures.

After all the progress we've made since the first Earth Day 25 years ago, we cannot go back. We must go forward.

Every American Must Help

It is the job of government to protect the public. But government cannot do the job alone. We need every American to help ensure strong public health and environmental protections. Joining together is not a matter of choice—it is a necessity. We all breathe the same air, drink the same water, and work and play in the same environment. That's why EPA is using this 25th anniversary of Earth Day to remind parents and kids, communities and companies that "the Earth is in your hands." If we join together, we can take the common sense steps we need to take—and be proud to pass along a safe, clean world to our children and our children's children. □



Robert Visser photo. Greenpeace. Copyrighted

Recycling—a step toward becoming an environmental citizen.

Polluted runoff in the making: Oil and debris from parking lots and streets end up in our rivers, lakes, and streams.



Steve Delaney photo. EPA

EPA Earth Day Contacts

EPA Headquarters
Melba Meador
 Earth Day Coordinator
 401 M Street, SW. (1101ED)
 Washington, DC 20460
 Phone: 202 260-1128
 Fax: 202 260-3384

Region 1
 (CT, ME, MA, NH, RI, VT)
Frank McIntyre
 John F. Kennedy Federal Building
 (REA)
 Boston, MA 02203
 Phone: 617 565-9028
 Fax: 617 565-3415

Region 2
 (NJ, NY, PR, VI)
Ann Rychlenski
 290 Broadway
 New York, NY 10007
 Phone: 212 637-3672
 Fax: 212 637-4445

Region 3
 (DE, DC, MD, PA, VA, WV)
Virginia Moseley
 841 Chestnut Building (3EA20)
 Philadelphia, PA 19107-4431
 Phone: 215 597-9904
 Fax: 215 580-2009

Region 4
 (AL, FL, GA, KY, MS, NC, SC, TN)
Alice Chastain
 Office of Public Affairs
 345 Courtland Street, NE.
 Atlanta, GA 30365
 Phone: 404 347-3555 ext. 6747
 Fax: 404 347-3721

Region 5
 (IL, IN, MI, MN, OH, WI)
Nancy Sullivan
 77 West Jackson Boulevard
 Chicago, IL 60604-3507
 Phone: 312 886-6687
 Fax: 312 353-1155

Region 6
 (AR, LA, NM, OK, TX)
Alfredo Coy
 1445 Ross Avenue (Mail Code 6X)
 Dallas, TX 75202-2733
 Phone: 214 665-2206
 Fax: 214 665-2118

Region 7
 (IA, KS, MO, NE)
Bill Landis
 Office of External Programs
 726 Minnesota Avenue
 Kansas City, KS 66101
 Phone: 913 551-7314
 Fax: 913 551-7066

Region 8
 (CO, MT, ND, SD, UT, WY)
Linda Woodworth
 (80EA-EISC)
 999 18th Street, Suite 800
 Denver, CO 80202-2466
 Phone: 303 391-6219
 Fax: 303 391-6216

Region 9
 (AZ, CA, HI, NV, AS, GU)
Ida Tolliver
 75 Hawthorne Street (E-2)
 San Francisco, CA 94105
 Phone: 415 744-1581
 Fax: 415 744-1605

Region 10
 (AK, ID, OR, WA)
Sally Hanft
 1200 6th Avenue (MS SO-141)
 Seattle, WA 98101
 Phone: 206 553-1207
 Fax: 206 553-1809

ORD Laboratories
Research Triangle Park Lab
 Research Triangle Park, NC
 919 541-5552

Cincinnati Lab
 Cincinnati, OH 513 569-7773

Robert E. Kerr
Environmental Research Lab
 Ada, OK 405 436-8511

Environmental Research Labs
Gulf Breeze, FL 904 934-9208
Athens, GA 706 546-3524
Duluth, MN 218 720-5500
Corvallis, OR 503 754-4601
Narragansett, RI 401 782-3000



Documerica photo by Chester Higgins, Jr. National Archives

Unwelcome arrival—an oil slick invades New York Harbor (1973).

Earth Day 25 Years Later

We must strive to achieve a sustainable society

by Gaylord Nelson

On April 22, 1970, Earth Day was held, one of the most remarkable happenings in the history of democracy. Fully 10 percent of the population of the country, twenty million people, demonstrated their support for redeeming the American environment. . . . American politics and public policy would never be the same. (*American Heritage* magazine, October 1993)

The idea of Earth Day 1970 was to have a national demonstration of environmental concern big enough to shake up the political establishment—get its attention, get some action, force environmental issues onto the political agenda of national priorities. The idea worked, thanks to the spontaneous response of millions of concerned Americans, and the event served as a wake-up call to the political establishment. Suddenly, the environment became a national political priority.

Since Earth Day 1970, Congress has enacted nearly 40 major federal environmental laws addressing a wide range of issues, including clean air, clean water, energy conservation, hazardous wastes, and herbicides and other pesticides. Dozens of individual public land bills have been enacted since 1970 to designate or expand wilderness areas, wild and scenic rivers, national parks, and wildlife refuges. Perhaps most important, more than 80 percent of Americans now regard themselves as environmentalists.

Since 1970 we have come a long way. After 25 years of researching, debating, and learning, increasing numbers of people recognize that the state of the environment is the key factor in determining our way of life and the quality of it.

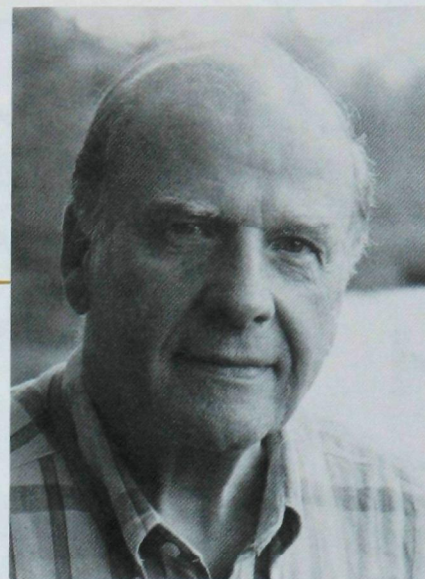
Increasingly, we are coming to understand that air, water, soil, forests, minerals, rivers, lakes, oceans, scenic beauty, wildlife habitats, and biodiversity constitute the wealth of the nation. This is our capital. In short, these resources are all there is. That's the whole economy. That's where all the economic activity—and all the jobs—comes from.

Nonetheless, this simple proposition is conveniently overlooked when doing so serves some immediate political or financial interest. That's why we so frequently hear political and business leaders, economists, and others who should know better vacuously assert

*In the jargon
of the business world,
the economy is a
wholly owned subsidiary
of the environment.*

that they "are for the environment if it doesn't cost jobs." This misses the obvious point that a healthy environment and a prosperous economy are inextricably tied one to the other.

In the jargon of the business world, the economy is a wholly owned subsidiary of the environment. All economic activity is dependent on that environment, on its underlying resource base. If the environment is finally forced to file under Chapter 11 because its resource base has been polluted, degraded, dissipated, and irretrievably compromised, then the economy goes bankrupt with it because the economy is just a subset within the ecological system. When the environment is sacrificed in the short-term



Gaylord Nelson today.

interest of creating jobs, the cost and long-term job loss always exceed the immediate benefit. Consuming capital and counting it as income—this is the road to bankruptcy.

At this point in history, no nation has managed to evolve into a sustainable society. All are pursuing a self-destructive course; we are all fueling our economies by consuming our capital—that is to say, by degrading our resource base.

Recently, in a joint statement, the United States National Academy of Sciences and the Royal Society of London, two of the world's leading scientific bodies, addressed the state of the planet in the following words:

If current predictions of population growth prove accurate and patterns of human activity on the planet remain unchanged, science and technology may not be able to prevent either irreversible degradation of the environment or continued poverty for much of the world. (*Population Growth, Resource Consumption, and a Sustainable World*, 1992)

This sobering observation confronts us with the challenge to significantly reduce population growth in the next few years and achieve population stability before the mid-21st century.

Right now, we are dealing with a

Save the Earth



Earth Day marchers in New York City in 1989.

Nancy Le Vine photo. Greenpeace. Copyrighted

social, ecological, and economic challenge unlike any other in our history. This challenge is far more serious than the military threat to the democratic West in World War II. Nations can recover from lost wars—witness Germany and Japan—but there is no recovery from a destroyed ecosystem.

On December 5, 1962, Dean Acheson, in a speech at West Point, observed that

"Britain has lost an empire and has not yet found a goal." Ironically, that describes the current American dilemma. The Soviet superpower has disintegrated, the Communist menace has dissolved, and the Cold War is over. As yet, as a nation, the United States has not found a unifying theme, a moral cause to replace the Cold War—this despite the fact that a monumental moral cause is near at hand, a far more serious chal-

lenge than the Cold War ever was. It's the war against the planet. How do we bring it to an end, and where do we start? We must start in the United States. We cannot and should not wait for the rest of the world.

Truly understanding that sustainability is the ultimate issue will bring America face-to-face with the political challenge of forging a sustainable society during the next few decades. It is a challenge America can meet if we have the leadership and the political will to do so.

Nearly 60 years ago, in a speech in Philadelphia on June 27, 1936, President Roosevelt said:

There is a mysterious cycle in human events. To some generations much is given. Of other generations much is expected. This generation of Americans has a rendezvous with destiny.

This eloquent exhortation fits well the generation now coming of age. The challenge of creating a sustainable society implies a bigger rendezvous with history and a bigger destiny than Roosevelt was thinking about in 1936. With enough determination, Americans can measure up to the challenge. I am optimistic the generation now preparing to take the helm will have the foresight and will to do so. □

(Nelson, formerly a U.S. Senator from Wisconsin, was founder of Earth Day 1970. He is currently Counselor for the Wilderness Society. In addition, he is Chairman of Earth Day XXV, a group that is helping to organize a national Earth Day event on the Mall in Washington, DC.)

Environmental Protection: Is the Public Willing to Pay?

Last December, current EPA Administrator Carol Browner and three former administrators participated in a forum at Harvard University's John F. Kennedy School of Government. They shared their views on whether the American public continues to be willing to pay the economic costs of protecting the environment. Robert Stavins, Associate Professor of Public Policy at the Kennedy School, moderated the forum, which was broadcast on C-SPAN. Excerpts from the program follow.

Robert Stavins



Martha Stewart photo. Copyrighted

It has frequently been suggested that the modern environmental policy era began in 1970 at the time of the first Earth Day. That's also the year that marked the founding, not coincidentally, of EPA. Since that time, I think it's fair to say that there has been a gradual but ever increasing awareness that there are linkages between our desires for environmental protection on the one hand and economic realities on the other.

This recognition has been absolutely bipartisan. For example, it was the Bush administration that explicitly recognized the connection between environmental and economic policy when it insisted in a 1990 report that "economic growth is a

Ahead of their time: Earth Day 1970 marchers recognize links between environmental and economic concerns.



Neal Boenzi photo. The New York Times. Copyrighted.

necessary condition for environmental improvement." The Clinton Administration carried that recognition further when the President, in his 1993 Earth Day speech, described "environmental protection as a necessary condition for economic welfare."

In any case, the perception among all participants in the environmental policy process is fundamentally that the linkages between the environment and the economy have never been greater than they are now. This program, then, should not only be of great interest to all of us but also of great relevance. Does environmental protection inevitably come at some economic cost? Is the public beginning to express resistance to further increases in that cost? Or is the public continuing to demand greater levels of environmental quality despite the economic costs that may be forthcoming? Or are those very questions themselves misleading? Is there no real tradeoff between environmental protection and economic welfare in the first place? Is it, as Vice-President Gore and many others have asserted, a false dichotomy? [See Gore's article in EPA Journal's Fall 1994 issue.]

Carol M. Browner



Steve Delaney photo EPA

Next December, EPA will celebrate its 25th anniversary. If we look back to 1970, we will recall that the public was angry. They were alarmed when thousands of leaking barrels of toxic chemicals were discovered in Love Canal, when farmers in Michigan had to shoot their cows because they'd been contaminated by toxic chemicals in their feed, when the water in New Orleans became so contaminated that people could not drink it, when a river in Cleveland caught fire. It was these and other crises that caused us to come together as a nation and pass some very important environmental laws.

When I look at what my predecessors have been able to accomplish in their tenures at EPA, I think it is truly remarkable. Not only can we point to very real environmental improvements, but our

*Americans spend \$2 billion
yearly on bottled water—
half the amount the
country spends to protect
tap water.*

Steve Delaney photo EPA



environmental technology is in demand around the world. Yet I think we would also agree that there is a tremendous amount that remains to be done. The problems that remain are still very real despite the progress we have made as a country. [See article by Administrator Browner on page 4.]

Is the public still willing to pay? It is clear, as poll after poll shows, that the public is still deeply concerned about environmental protection. They are particularly concerned about threats to their health, to the health of their children. Many believe we haven't gone far enough.

At the same time, we hear people saying: "Well, I don't know if I want to pay for it. I'm confused about whether the solutions that are proposed are really the common-sense answer to the problem."



So I think that the question is not simply, "Are people willing to pay?"—that's a piece of it—but "For what are they willing to pay?" Let me use an example that I think demonstrates how confused the public is. As a country, we spend \$4 billion a year to deliver clean water to the tap. That's the bill for safe drinking water that each and every one of us chips in for. We point out to people the problems we are beginning to see in our drinking-water supply, such as those that occurred recently in Milwaukee, New York, and Washington, DC, and we ask them if they are willing to pay more. They say they don't think so. Yet the people in one out of six households spend \$2 billion a year for bottled water.

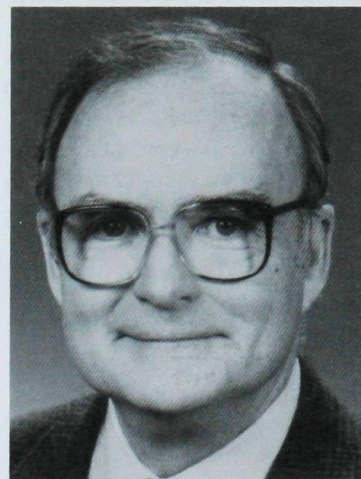
In other words, when people have control over the decision, they are willing to spend more. When they can go into the grocery store and make a consumer decision, they're willing to do it. As a nation, we are now actually spending \$6 billion for the water we drink, but a third of that is being spent outside the traditional system designed to provide safe drinking water.

What this demonstrates, I think, is that we need to change the process, that we need to find new ways of achieving our goals. Above all, we need to find new ways of involving the public in developing solutions. It does not mean that we should change our commitment to standards that will protect human health and protect our natural resources.

Clearly, government has an important responsibility, but we can't do the job alone. We have to reach out to communities, to the people who will live with the decisions we make. We have to involve them in shaping decisions, give them access to information so that they can feel they are participating in the process.

(Browner is the current EPA Administrator.)

William Ruckelshaus



Woodallen photo.

I have thought about what I might say that could help, and I have come up with three modest objectives for environmental policy for the next two years. We can't be sure what these next two years will bring, although they will undoubtedly be much different than the two years that preceded this one. Hopefully, they will bode some good for the environment and for the environmental policy of the country.

In the first place, I think advancement of the public's knowledge about the nature of environmental problems, to the point where public demands for environmental protection could match their collective interest, would be a very good thing. To accomplish this public education will entail using the bully pulpit of the EPA Administrator, of the Congress, and of the White House. I think we desperately need more knowledge transfer from our leaders in this country—and less opportunistic advocacy—if we are to reverse literally decades of erosion of public trust in our government.

Secondly, we should seek to adjust current statutes and regulations so that we can derive more environmental and public-health benefits from them at a reasonable cost. This means, first and foremost, providing more flexibility to the Administrator of EPA.

EPA simply needs a bigger tool box. It needs not only to be able to use com-

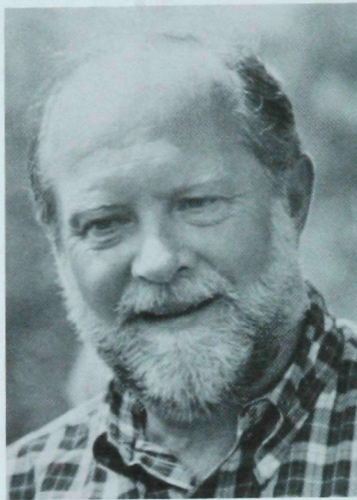
mand-and-control, which has fallen on bad times of late, but instruments that, in effect, align our economic and environmental incentives and goals. This means an honest look at what should be done to protect the environment and at what level of government. We could certainly start with a law that everybody acknowledges doesn't work, Superfund, and see if we can make our laudable desire to clean up past messes become more efficient and effective.

Third, let me suggest to my newly empowered Republican colleagues: Please avoid wild swings of the pendulum away from regulation and toward laissez-faire environmental policy, because once swung the pendulum will inevitably come swinging wildly back, thereby destroying the predictability which is so terribly important to progress in the environmental area.

Finally, in response to Robert Stavins' question about whether the public is willing to pay for environmental protection, the answer is yes: People do support social regulations governing public health and the environment when the cost of that regulation is perceived as remote—whether remote in the sense of how the requisite money is expended by the public or private sector, or in the sense of how the regulation burdens them. If you go to an average city in this country and ask the question, "Are you in favor of more strict enforcement of the Clean Air Act?" 80 percent of the people will probably say yes. If you go to that same city and say, "Are you willing to spend 20 minutes a year to get your car inspected in order to help achieve those standards?" 80 percent are likely to say no. As Carol Browner suggested in her remarks, there is an obvious disconnect. At some point there has to be acceptance of civic responsibility as well as the assertion of rights to things like clean air. We complain a lot in this country that we haven't got the right kind of leaders; we need the right kind of followers as well.

(Ruckelshaus was EPA Administrator from December 1971 to April 1973 and from May 1983 to January 1985. He is currently Chairman and Chief Executive Officer of Browning-Ferris Industries.)

Douglas Costle



I remember the 1970s as a time when we were trying to put into place a legislative base for dealing with environmental problems. I also remember the tremendous bipartisan congressional support that was there all through the 70s. There was a tradition of bipartisan-ship and political consensus around trying to deal with these problems right from the beginning.

I think it is also true to say that the focus of much of that legislative base was to play catchup and that the chosen instrument was command-and-control regulation. And I think a consensus emerged early on, even back in the Carter years, that it was time to begin experimenting with other models for decision making.

I am reminded that in Woodstock, Vermont, where I now live, we have an annual celebration called the Wassail Parade. Everybody dresses up in old-fashioned costumes, and if they've got a horse, they ride it in this parade that passes through Woodstock and circles the town green. It marks the beginning of the holiday season and it's very colorful.

A friend of mine, who is also the town chimney sweep, is always the last person in the parade. He rides around on the

tailgate of a wagon with a great big garbage can and a shovel. His job is to scoop up the droppings and dump them in the can. When he goes by, you know the parade is over. Well, this year, instead of riding on the tailgate of a truck, he showed up on Rollerblades. I suppose he wanted to show that the world changes even in Vermont.

I always think of that story as analogous to our situation with the environment. We've been involved in a catch-up, clean-up kind of game, and we've made a lot of progress. The street is cleaner, certainly, than it was when we started. And there will be a residual requirement for command-and-control regulation for some time to come.

But we've been dealing with technologies that were conceived without reference to their environmental consequence. You name it—steelmaking, chemical manufacturing, automobiles, consumer products—the cumulative burden finally caught up to us in the 60s. And so we've been going around trying to fix them, like a plumber called in for an emergency.

I think the challenge now is to recognize that our job is a lot more than just trying to fix the past mistakes. We must find ways to catch the train that's already leaving the station in terms of future investment in new plant equipment and new technologies. We can bend that investment by incentive or by regulation—I would prefer incentive—in the direction of technologies that are more resource efficient and that pollute less, reflecting a more realistic understanding of the constraints on global resources. In the case of energy, I think it's the same thing: We're talking about much less wasteful energy consumption. We cannot, for example, solve the global warming problem if we don't somehow assist China to choose a new direction in terms of energy-generating capacity. The same can be said for virtually every form of economic activity right through agriculture.

The challenge, then, is not just to come up with quick fixes. It's going to require some thoughtful redesign of our tax

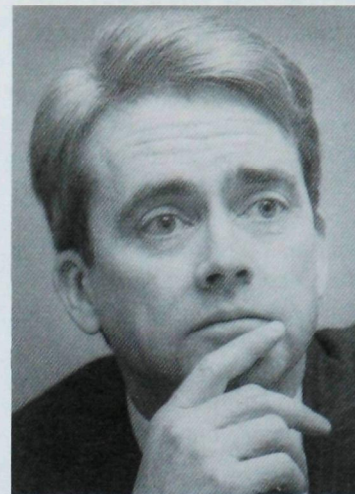
code, of our incentives, a redefinition of what we mean by economic well-being.

I worry that in the short term we may see a radical change in the political institutions that have brought forth our legislative base of environmental law and regulation. I think we could lose an opportunity to ensure that environmental objectives are a part of the destination of that train into the future. But I don't think we can ever turn the tide back, for several reasons. The environment has become a permanent part of our political value system. We now have a whole generation of Americans who understand in their gut what we were only coming to understand in our head: This

is important. This is a matter of the survival of the global commons. It is an issue that cuts uniquely across the socioeconomic spectrum and across international boundaries; it cuts across ethnic boundaries and across religious, national, and economic boundaries. It will increasingly be the stuff of international affairs and geopolitical debate and discussion. The problems are real. And that in the end is what matters: The problems are, in fact, real.

(Costle was Administrator of EPA from March 1977 to January 1981. More recently, he served as Dean of the Vermont Law School.)

William Reilly



Steve Delaney photo EPA

Documerica photo National Archives



Thanks to a sewage-treatment plant opened in July 1962, a park in Seattle, Washington, is reopened to swimmers—an early success story.

I would begin by reaffirming what some of the others on this panel have already said about the tremendous progress we have made on the environment. I think it is the single most successful public policy of modern American history. It's quantifiable, it's measurable, it's really indisputable. Yet nobody knows it. The columnist Mark Shields has advanced a theory as to why this is so. He claims that the reason no one knows what progress we've made is that there is a conspiracy between Republicans, who don't want to admit that government works, and Democrats, who don't want to acknowledge that most of the progress occurred under Republican presidents. So they both keep quiet about it.

I personally think it is vital that the country understand that this is an area of tremendous success and achievement. We build on a foundation of success. Not long ago I came across a piece of advice in a directive from the Hemlock Society, an organization which assists its members in relieving themselves of the burden of existence in this vale of tears we call life. Their advice, in paraphrase, was: "If you are planning to take extreme action, under no circumstances rely on the carbon-monoxide emissions

from any automobile manufactured after 1993." This is our car; this is the Clean Air Act of 1990's car. Let's advertise it and be proud of it.

My second point is that, when you get right down to it, the techniques and methods that we have relied upon to take us so far have been—what? Public spending for all those wastewater-treatment plants on the one hand and command-and-control regulations with their concomitant unfunded mandates on the other. These are no longer to any really significant degree available to us. They are yielding diminishing returns. We need to move beyond them.

We need not fear scrutiny of environmental policy from skeptical scientists.

Yet, I think we need not fear the new era. We have over the past few years laid the conceptual foundation for new departures toward far more cost-effective policies. To a considerable degree, when a new environmental initiative is under consideration, congressmen and senators now ask the questions: "How many lives does this affect? What is the health impact of the problem we are trying to address here?" That didn't really used to be true. I think in the early 70s there was very little science involved in the crafting of our environmental laws and priorities. There still is a great asymmetry between what the public considers serious—largely oil spills and hazardous waste—versus what the scientists consider most important—indoor air pollution, ozone depletion, climate change, and so forth. But I think those divergent lines of public and expert opinion have come closer together. The right questions increasingly are being asked.

I think that the degree to which we have legitimized science should put the Agency in a very good position to take seriously the claims from so much of the regulated community, and of some portion of the scientific community, that in some areas—I am thinking particularly of hazardous waste—we have been regulating with a preposterous conservatism in terms both of unreasonable inferences from animal data and unrealistic human-exposure assumptions. I think we need not fear scrutiny of environmental policy from skeptical scientists. I think we ought to lead the great review, the overdue sorting-out of environmental priorities that science, politics, and economics all are forcing. We ought not be defensive about current environmental priorities, or fearful of reconsidering them. Environmentalists, EPA professionals particularly, have the tools to undertake the overhaul.

Finally, we should put to rest another view that prevailed during the first generation of environmental laws, and that is that the states typically are merely recalcitrant backwaters of the special interests. Rather, they are increasingly the cockpits of innovation, of new ideas, of programmatic initiatives that work—initiatives that are copied by other states, and that then find their way to Washington. Now is a moment, therefore, in which we can consider delegation to a degree that probably was not possible 10 or 15 years ago. By increasingly encouraging states to make their own decisions, we can begin to eliminate the tremendous duplication that characterizes the administration of federal environmental laws. We can save some bureaucracy and some money. And we may also foster more diversity and innovation in the great enterprise of protecting health and natural systems in this country.

(Reilly was EPA Administrator from February 1989 to January 1993.)

□

What Voters Say About the Environment Today

Poll shows widespread support for green causes

by Bill Line

Despite last November's election results, Americans in all parts of the country say they did not vote to weaken or undermine the nation's environmental laws and regulations, according to a nationwide poll. The poll of 1,201 people who voted in the November general election was conducted from December 1 to 4, 1994. The poll has an overall margin of error of plus or minus 3.2 percent.

Commissioned by the National Wildlife Federation and conducted by the polling firm of Peter D. Hart Associates, the poll shows respondents overwhelmingly support the environment and the regulations designed to protect it. Forty-one percent of all voters said existing laws don't go far enough in protecting the environment. In both major parties, a plurality of voters agreed that current laws need to be tougher—50 percent of all Democrats and 34 percent of all Republicans. Among voters as a whole, 21 percent said existing laws strike the right balance. Just 18 percent said existing regulations go too far.

The poll found only a small percentage of voters considered environmental positions when choosing candidates, with issues like crime and the economy playing a far greater role in influencing decisions.

"Candidates weren't talking about the environment, and the voters had other things on their minds," explained pollster Peter D. Hart. "But when we asked them about the environment, they had very strong opinions."

The poll found public support for several protection measures that do not mesh well with the stated positions of many new congressional leaders.

(Line is Manager of Education Communications at the National Wildlife Federation. Founded in 1936, the National Wildlife Federation works to educate and assist individuals and organizations to conserve natural resources and to protect the Earth's environment.)



Voters don't want environmental protection rolled back.

Steve Delaney photo. EPA

Among those findings:

- 76 percent favor strengthening safe drinking water laws.
- 56 percent oppose requiring compensation to property owners prevented by environmental regulations from doing what they want with their land.
- 57 percent favor maintaining the strong provisions of the Endangered Species Act.
- 63 percent say mining, ranching, and logging operations should be charged a "fair market fee" for use of public land.
- 64 percent favor redirecting crop subsidies to encourage farmers to keep pesticides out of food and water.

Support was equally strong among voters expressing particular concern for the economy, jobs, and the cost of living—often cited as a reason for limiting environmental protection. The

poll found that 41 percent of respondents said current laws don't go far enough and that there is little sympathy for claims saying environmental laws place an undue burden on businesses. While 21 percent of voters said those laws properly balance the needs of business and the public, 46 percent said the businesses should be required to do more.

"Voters clearly believe existing environmental laws provide insufficient protection," said Hart. "And they don't want those protections rolled back."

"Conserving this Earth isn't liberal or conservative, Republican or Democratic," said National Wildlife Federation President Jay D. Hair. "It's the only way to ensure [that] our grandchildren enjoy a quality of life at least as good as what we have."

Hair cited upcoming legislative action on the Farm Bill and Safe Drinking Water Act as opportunities for bipartisan progress that benefits all Americans. □

Good News for Waste Watchers

Recycling, composting show results for the future

by Roy Popkin

Recycling—perhaps the most common household practice that benefits the environment—has boomed in the 25 years since the first Earth Day. And all that effort is paying off: More Americans are recycling and composting, and those efforts are reducing waste headed for landfills and incinerators.

Even more promising are the future trends: In the year 2000, Americans may be contributing measurably less to the municipal solid-waste stream than they did in 1993. The downward trend—from 4.4 pounds per person per day in 1993 to 4.3 in 2000—is projected in a recent EPA publication, *Characterization of Municipal Solid Waste in the United States: 1994 Update* (EPA 530-S-94-042). If this happens as projected, it will be the first such drop since 1960, the first year for which comparable data were analyzed.

Two developments in particular are driving this trend. Manufacturers are making efforts to reduce the amount of

packaging they use, and composting is on the upswing. Trimmings left on American lawns or piled in backyards have steadily increased since 1990. According to this report, more than half of the 50 states now require yard trimmings to be diverted from the waste stream.

The total amount sent to landfills or incinerators is projected to decline—from 162 to 152 million tons (see graph)—even though consumer demands and population growth will boost the amount of waste generated over the next several years from 207 million tons per year in 1993 to 218 million tons in 2000.

Among the report's other highlights:

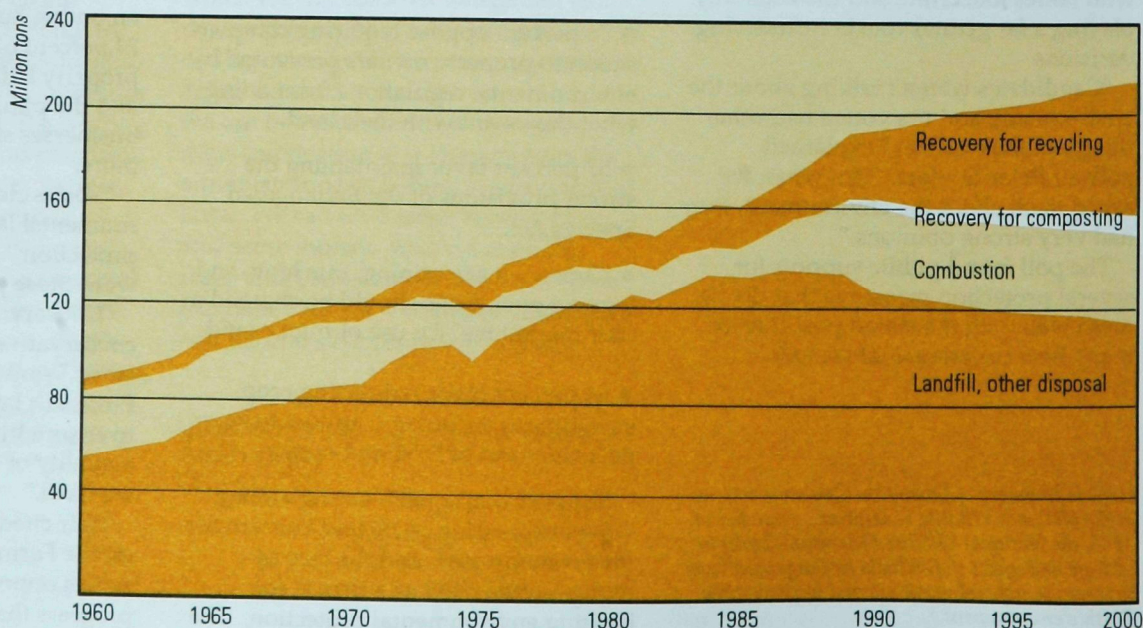
- Recovery of waste for recycling and for composting at community facilities was estimated to be 22 percent of the total waste stream in 1993, up from 17 percent in 1990, an impressive growth in just three years. The amount recovered rose from 33 to 45 million tons. Over

half the increase was paper and paper-board. Yard trimmings for composting showed the next greatest increase. In 1985, 83 percent of all municipal solid waste was dumped in landfills; in 1993 the percentage had dropped to 62. Nevertheless, landfilling will continue to be the predominant waste-management method into the year 2000.

- Combustion, usually with energy recovery, currently accounts for 16 percent of municipal solid-waste disposal (in the early 1960s about twice as much was incinerated), and it is projected that combusted tonnage will increase only slightly by 2000.

Municipal solid waste comes from homes, office buildings, retail and wholesale establishments, restaurants, schools, libraries, hospitals, prisons, and from industrial packaging and administrative sources (not from industrial processes). It includes such items as newspapers, clothing, disposable

Municipal Solid Waste Management, 1960 to 2000





Don Hogan Charles photo The New York Times Copyrighted

Students protest refuse build-up on Earth Day 1970. Twenty-five years later, recycling has taken hold.

tableware, packaging, cafeteria and restroom trash, yard trimmings, office papers, tires, old furniture, appliances, and the like.

EPA endorses source reduction as the preferred way to reduce the municipal waste stream. Source reduction includes reusing products (glass bottles, for example) and composting yard waste—any measure that keeps waste from having to be disposed of in the first place. Recycling is next in preference. Waste combustion and landfilling are the least desirable of available waste management practices.

The report indicates that the amount of waste generated nationally fluctuates with the economy and with family size—oddly, families living in smaller homes create more waste per person than those in larger ones. The amount often reflects

the introduction of new kinds of throw-away products into the marketplace. Waste generation is projected to increase in areas including paper products, specifically corrugated and paperboard packaging and third-class mail. Says the report, "It is difficult to predict which innovations and new products will affect the amounts and types of [municipal solid waste] discards. For example, there have long been predictions of the 'paperless office' due to improvements in electronic communications, but in fact, facsimile machines, high-speed copiers, and personal computers have caused increasing amounts of paper to be generated in offices. . . ."

Recovery of durable goods such as furniture, appliances, and office machinery for re-use seems to be increasing, especially in industrial plants. And

recycling of glass bottles, metal cans, tools, and wood used in shipping is on the increase. This latter kind of activity is often undertaken by community organizations or charitable groups, which also gather clothing and other nondurable goods for resale or distribution. All of this, of course, keeps such materials out of the landfills or incinerators.

The report can be obtained electronically on Internet through the EPA Public Access Server at "gopher.epa.gov." For a copy of the executive summary, call the RCRA/Superfund Hotline at 800 424-9346. □

(Popkin is a Writer/Editor in EPA's Office of Communications, Education, and Public Affairs.)

Experienced Help for the Environment

Seniors volunteer for their communities—and themselves

by Tom Benjamin

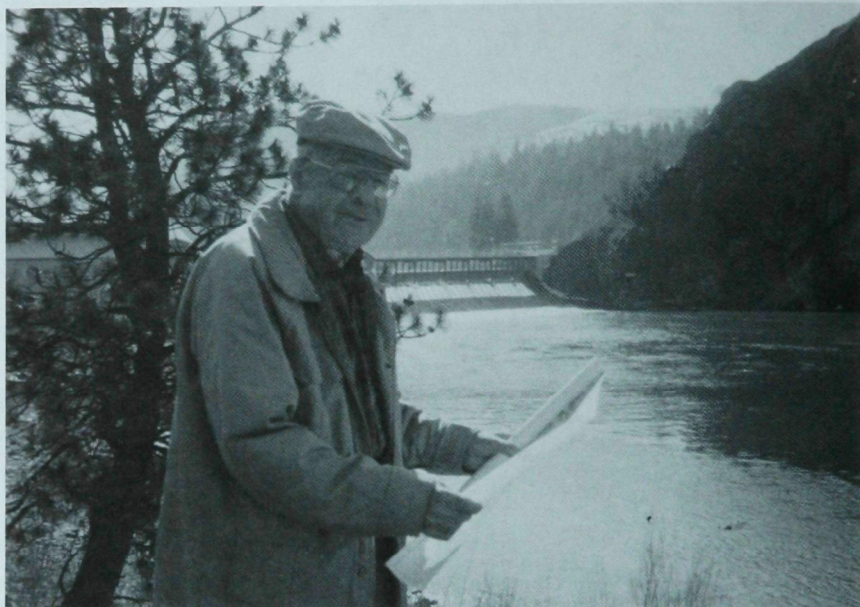
How can communities draw on the life experiences and professional skills of one of our most precious and underutilized natural resources to help solve environmental problems at the local level? Get senior citizens involved.

Founded in January 1992 by a partnership of environmental, government, and senior volunteer organizations (see box), the Environmental Alliance for Senior Involvement (EASI) identifies ways to foster senior involvement in environmental issues. The members of EASI have developed an extensive network of environmental, senior volunteer projects across the country. These projects include everything from recycling to monitoring Superfund sites.

One project that received national attention and was a model for others coordinated a survey of potential sources of groundwater contamination in and around El Paso, Texas. Local officials used the survey's information to help identify potential problem areas and reduce the possibility of contaminants entering the groundwater.

This is an example of members of a community taking on a problem and helping to solve it collectively. Twenty-six senior volunteers were trained to find and identify contaminants. They conducted a house-to-house survey in three and a half days and saved the Texas Water Commission \$35,000. Seniors identified 2,000 potential pollution sources, ranging from underground storage tanks to leaking municipal sewer lines. A unique advantage they brought to the survey: Many could remember where gas stations had once stood on what are now vacant lots.

This project led to the guide, *Volunteers and the Environment: A "How To" Manual For Groundwater Protection*



Leonard Schombel analyzes hydrology maps at Milltown Dam.

RSVP photo

Projects, published in 1992 in cooperation with the National Association of RSVP Directors, Inc. The manual has become a widely used tool for other projects around the country.

In Missoula, Montana, the recently formed Senior Environmental Corps, among its other projects, assigns seniors with scientific and engineering skills to help a citizens' group monitor activities at one of the nation's largest Superfund sites, the Milltown Reservoir Site. Volunteer senior Leonard Schombel, a retired petroleum geophysicist, analyzes hydrology maps for the Milltown Technical Assistance Committee, a citizens' group. Schombel reports that prior to his joining the Missoula Corps he'd found it difficult to find volunteer work in which he could use his skills.

In another project, volunteers from Missoula's Senior Environmental Corps grow food for such organizations as the Missoula Food Bank and the Family Food Assistance Program, which assist the community's needy population. On a remarkably small plot of land, these

volunteers grew more than 700 pounds of produce, including potatoes, carrots, onions, cabbages, Swiss chard, lettuce, and tomatoes, all of which went to feed the hungry. They grew the food organically, meaning that they used no chemically formulated fertilizers or pesticides.

Missoula's television station KECI-TV 13 supported the garden project by producing and broadcasting public service announcements that described the good works of the Senior Environmental Corps and called for more volunteers. The station also featured volunteers offering organic gardening tips during the weather portion of its 6:00 p.m. news program.

These are but three of 85 projects highlighted in *Environmental Senior Volunteer Resources Guide* to be published by EASI this spring. For information on the guide or on EASI itself, write to: EASI, 8733 Old Dumfries Road, Catlett, VA 22019, or call 703 788-3274. □

(Benjamin is President of the Environmental Alliance for Senior Involvement.)



Missoula seniors use organic gardening practices to grow food for the needy.

RSVP photo

Founders of EASI

- Alliance for Environmental Education
- American Association of Retired Persons
- Cooperative Extension Service
- U.S. EPA
- Izaak Walton League of America
- National Park Service
- National Wildlife Federation
- North American Coalition for Religion and Ecology
- National Association of RSVP Directors
- Renew America
- Retired Senior Volunteer Program (RSVP)/ACTION
(now part of President Clinton's National Service Program and known as The Corporation for National and Community Service)
- Scientific Environmental Research Foundation
- Senior Environment Corps
- The Nature Conservancy
- USDA Soil Conservation Service



RSVP photo

Senior volunteer and younger AmeriCorps workers collect groundwater samples near El Paso.

Looking Ahead to the Planet's Future

"Futures" research is a facet of pollution prevention

by Raymond Loehr

For the past quarter century, the basic approach to environmental protection in this country has been, for the most part, reactive. Institutions have been established, laws passed, and regulations written in response to problems that already were posing substantial ecological and public-health risks and costs—or that already were causing deep-seated public concern.

Since its inception, EPA—like the nation—has focused its attention almost exclusively on the present and the past. The political will to establish the Agency grew out of a series of highly publicized, well-advanced environmental problems, like the fire on the Cuyahoga River, smog in California, and the near-extinction of the bald eagle. During the 1970s and 1980s, the U.S. Congress enacted a series of laws intended to solve serious existing environmental problems, and EPA was given the responsibility to administer most of them. The Superfund program, by definition, was intended to clean up the environmental mistakes of the past. Even those EPA activities that are intended explicitly to avoid future problems, like pollution-prevention programs and new source performance standards, are given impetus by problems that already exist.

Despite the nation's demonstrable success in ameliorating a number of existing environmental problems, an almost exclusive reliance on after-the-fact response will not protect the environment adequately in the future. It is essential for EPA—and for other agencies and organizations whose activities affect the environment—to begin to anticipate future environmental problems, then take steps to avoid them, not just

respond to them after the fact. Indeed, one of the most important lessons taught by this country's environmental history is that the failure to think about the future environmental consequences of prospective social, economic, and technological changes may impose substantial—and avoidable—economic and environmental costs on future generations. We can try to anticipate and minimize future environmental problems early on—or handle expensive crises later.

*We can try to anticipate
and minimize future
environmental problems
early on—or handle
expensive crises later.*

Thinking about the future is more important today than ever before because ever-faster change is shrinking the distance between the present and the future. Technological capabilities—in computers, for example—that seemed beyond the horizon just a few years ago now seem old-fashioned. Scientific understanding and the flow of information are accelerating. Similarly, the environmental effects of global economic activity are being felt more rapidly by both nations and individuals.

As a result, traditional responses to environmental problems will not be effective enough, or take effect quickly enough, to protect vital economic and environmental resources. If, for example, the terrestrial and oceanic ecosystems needed to sustain our food supply and our quality of life began to deteriorate slowly but extensively, it probably would be too late to save indigenous species by the time population declines were noticed. In short, the pace of economic and technological change dictates an increased emphasis

on foresight to protect the environment over the long term.

Initiating thought and analysis well in advance of anticipated change can shorten the time needed to respond to such change and reduce—or avoid entirely—the kind of losses that result when pollution problems persist over time. Because such losses may be irreversible, response time may well be a critical measure of society's ability to protect environmental quality in the future. The bald eagle has soared back from the edge of extinction, but we should not forget that the loss of that species very nearly became irreversible, and only because we failed to pay attention to the possible side effects of some useful pesticides. Even when losses are potentially reversible, like the respiratory effects that result from short-term human exposure to ground-level ozone, high costs may be imposed on human health or the economy before they are reversed.

Thinking about the future also is valuable because the cost of avoiding a problem is often far less than the cost of cleaning it up. The national experience with hazardous-waste disposal provides a compelling example. Some private companies and federal facilities undoubtedly saved money in the short term by disposing of hazardous waste through provisional means, but those savings were dwarfed by the cost of cleaning up hazardous waste sites years later. In that case, foresight could have saved private industry, insurance companies, the federal government, and taxpayers billions of dollars, while reducing pollutant exposures—and resulting anxieties—in neighboring communities.

Besides reducing both the response time and the cost of protective actions,

*To avoid future ecological
crises, the health of the Earth's
oceans bears watching.*

(Loehr is a Professor of Civil Engineering at the University of Texas. In addition to having chaired the SAB Environmental Futures Committee, he previously served as Chairman of the SAB (1988 to 1993) and also cochaired the Relative Risk Reduction Strategies Committee, which produced the 1990 report Reducing Risk: Setting Priorities and Strategies for Environmental Protection.)



The bald eagle came close to extinction before DDT was banned.

Zane Williams photo. Copyrighted

thinking about the future can preserve a wider variety of response options. For example, there are several ways to limit the potential effects of solid-waste disposal on groundwater. There are fewer—and more expensive—alternatives for cleaning up groundwater after contamination.

Actions driven by environmental

foresight can help strengthen intergenerational equity by preserving the environmental inheritance of future generations. When one generation's behavior necessitates environmental remediation in the future, a burden of environmental debt is bequeathed to its children just as surely as unbalanced government budgets bequeath a burden

of future financial debt. By anticipating the emergence of environmental problems and by taking steps now to prevent them, the present generation can minimize the environmental debt that future generations will have to pay.

Finally, thinking about the future is valuable because it allows people to shape the world in which they live. The future undoubtedly will be different from the present; change is inexorable. But humanity is not powerless in the face of change. The kinds of changes that will occur and their effects on the environment are not inevitable and immutable. The future can be changed—and improved—through conscious action in the present.

Report of the Environmental Futures Committee

A pillar of EPA Administrator Carol Browner's strategy for environmental protection is pollution prevention—focusing on avoiding pollution, rather than on cleaning it up after the fact. In July 1993, the Administrator asked the Science Advisory Board (SAB) to investigate environmental futures. The SAB is a congressionally mandated, independent group of scientists, engineers, and other

National Park Service photo.



professionals who provide technical advice and information to the Administrator and other officials of the Agency. Administrator Browner solicited the SAB's advice on the value of anticipating environmental problems that might emerge in the future, the tools that might be used to anticipate them, and examples of possible emerging ecological and human health problems. In response, the SAB formed the Environmental Futures Committee (EFC) to undertake a study of environmental foresight with the following objectives:

- Assess different methodologies currently being used to study possible futures and anticipate likely future events
- Identify some environmental issues that could emerge over the long term (through the year 2025)
- Advise EPA on ways to incorporate futures research into the Agency's activities.

To meet the objectives of this study, the EFC first outlined a formal system of inquiry capable of anticipating possible environmental issues that could emerge over the next five to 30 years. Then it tested that system in order to define specific issues that could emerge. Thus the EFC not only delineated the various methodologies currently available to futures research, but it tested one of them. Both elements—the generic analysis and the specific application—contributed to the EFC's conclusions and recommendations.

From the outset, the EFC recognized that it was not possible to anticipate future environmental problems without attempting to identify the large social, economic, and technological forces that were likely to drive future changes in environmental conditions. Such drivers can generate environmental stressors that cause adverse effects on human health and ecological systems. Although there are many such drivers, the EFC identified four as especially important: population growth and urbanization, economic expansion and resource consumption, technological development, and environmental attitudes and institutions. Then the EFC reviewed the methodologies currently available for anticipating environmental issues that could emerge in the future. And finally, by applying one of the foresight method-

ologies, the EFC compiled an initial list of possible future environmental issues. The resulting report, entitled *Beyond the Horizon: Using Foresight to Protect the Environmental Future*, summarizes the results of the EFC study and offers several recommendations that have broad, future-oriented policy implications (see box).

The process of assessing and applying the formal system of inquiry called futures research led the EFC to the major conclusion of this report: **EPA, and other agencies and organizations whose activities affect the environment, should give as much attention to avoiding future environmental problems as to controlling current ones. In particular, EPA should establish a strong environmental futures capability to serve as an early warning system for emerging environmental problems.**

Because EPA is responsible for protecting the environment now and over the long term, the Agency has an obligation to search for the "weak signals" that portend future risks to environmental health and that provide early clues about how to ameliorate or avoid those risks. EPA's capability to detect and analyze these signals should be global in scope, eclectic in its use of information sources, and quantitative whenever possible. It should be continuous, interactive with other organizations, and subject to scrutiny from outside the Agency. It

should be linked to the "futures" efforts of other agencies and organizations, and its results should be shared openly with the public.

EPA's traditional ways of identifying—and solving—environmental problems will not be adequate to protect against problems that may emerge several years—or decades—from now. For example, the costs of future environmental problems, and the benefits of actions taken today to avoid them, will be difficult to estimate accurately. Moreover, futures research has to be extraordinarily tolerant of omissions, uncertainties, inaccuracies, and errors because any view beyond the horizon is inevitably dim.

Yet, looking beyond the horizon is essential to the nation's future success in protecting the environment. Protecting the future with foresight is a critical part of EPA's responsibility, and it is a forward-looking extension of the pollution-prevention concept.

EPA, however, is not solely responsible for looking beyond the horizon to protect future environmental quality. Many other organizations, both inside and outside of government, have substantial roles to play. The EFC's report contains detailed recommendations intended to help EPA, other federal agencies, the private sector, and the nation clarify their view of, and better protect, the environment of the future.



It is the hope of the SAB Environmental Futures Committee that EPA will consider and take into account the approaches and recommendations made in *Beyond the Horizon*. By taking appropriate steps, we can begin to protect our environmental future today. □

At Hawaii's Mauna Loa Observatory, scientists were able to detect and read telltale signs of an unprecedented hole in the Earth's ozone layer.

Editor's note: Readers may call 202 260-8414 to obtain a copy of the overview report entitled Beyond the Horizon: Using Foresight to Protect the Environmental Future. The overview report draws upon a more detailed Technical Annex as well as stand-alone reports from five other Science Advisory Board committees (namely, the SAB Committees on Drinking Water, on Ecological Processes and Effects, on Environmental Engineering, and on Indoor Air Quality/Total Human Exposure, and the Radiation Advisory Committee): All of these documents are available by calling the telephone number given above.



NOAA photo

The Recommendations

The Environmental Futures Committee did not predict or even suggest that environmental calamities are inevitable in the future. Rather, by investigating future possibilities, it attempted to draw attention to the value of anticipating, understanding, and—if necessary—responding now to environmental problems that may emerge in the future, rather than continuing to play "catch-up" with problems after they emerge. The following recommendations are intended to strengthen the nation's ability to protect the future by using the tools of foresight available now.

- **As much attention should be given to avoiding future environmental problems as to controlling current ones.**

EPA should incorporate futures research into all its programs and activities, particularly strategic planning and budgeting.

- **As an essential part of its futures capabilities, EPA should establish an early warning system to identify potential future environmental risks.** EPA should establish a look-out panel—made up of individuals from inside and outside government—to provide the Agency, and the nation, with an early warning of environmental issues that may emerge in the future.

- **To initiate its efforts, EPA should consider evaluating five overarching problem areas related to a number of potential environmental issues:** sustainability of terrestrial ecosystems; human health effects other than cancer; total air-pollutant loadings; nontraditional environmental stressors; and the health of the oceans.

- **EPA should stimulate coordinated national efforts to anticipate and respond to environmental change.** Since an integrated, national effort is essential to environmental protection, EPA should spur cooperative activities among federal agencies, different levels of government, and the private sectors in four key areas: improving and integrating environment-related futures studies; focusing attention on the broad causes of environmental change, not just the end results; improving environmental awareness and education; and establishing a broad-based data system for anticipating future environmental risks.

- **EPA, as well as other agencies and organizations, should recognize that global environmental quality is a matter of strategic national interest.** Recognizing that the United States is part of a global ecosystem that is affected by the actions of all countries, EPA should begin working with relevant agencies and organizations to develop strategic national policies that link national security, foreign relations, environmental quality, and economic growth.

Anishnabe: The Original People

Poetry from Charmaine Benz

HABITAT

Writing, for me, has been very healing. It has given me an avenue for sharing my ideas and thoughts with others. I am a member of the Saginaw Chippewa Tribe in Mt. Pleasant, Michigan. Americans gave us the name of Chippewa or Ojibwe, but our real name is "Anishnabe." It means the original people. Our homelands at one time included Michigan, Minnesota, Wisconsin, and a large part of Canada (before there were any borders).

I am the mother of two children, daughters, and will be a grandmother this spring. When I am not writing, I direct the Saginaw Chippewa Tribes substance-abuse program. We provide a wide array of services aimed at preventing substance abuse through teaching wellness.

The term Anishnabe refers to who we are. The poem is about our relationship with the land and how we are connected to it. As Anishnabe we often migrated, and we ate whatever food was available. We believe it was put there by the Creator for us to enjoy. Our diet included fish, deer, and other wild game, as well as potatoes, squash, berries, wild rice, and dried meat. We had an abundance of food.

Our spirituality remains intact: We believe that the Creator put us here and that the land is part of us. The Anishnabe world view is that nature is a vital and integral part of ourselves and our everyday living.

My influences come from my family, especially my mother and grandmother, from my tribe, my community, and my nation. My cultural influences are strong. This poem defines a sense of spirituality in who and what and where we have come from.

Native Americans were the first environmentalists. We never tried to conquer or control the land.

We appreciated it, saw beauty in it, and revered it.

Ah ho.

I am Anishnabe

I am Anishnabe
I come from the woods and the water
and
I have been here forever.

I have come from the womb of our Mother
The Earth,
In a handful of soil.

I am the spirit of the forest
Who walks along the shores of Lake Superior,
And lives in the shadows of the
Sacred Cedar.

I exist in consecrated song,

Trickster story and
Ojibwe legend.

If you look,
Like a soaring hawkwing,
I'll be there.
You can taste me like maple sugar,
You can hear me speaking
In pine forests and summer's twilight magic.

I am Anishnabe
I come from the woods and the water
and
I have been here forever.

"I am Anishnabe"

Copyright © 1994 Charmaine Benz
(Poem first printed in *The American Nature Writing Newsletter*, Fall 1994; vol. 6, no. 2.)

A New Back-Yard Ecology

From *Noah's Garden* by Sara Stein

Sara Stein is the author of numerous children's books and two gardening books for adults: My Weeds: A Gardener's Botany (1988), and Noah's Garden: Restoring the Ecology of Our Own Back Yards (1993). Stein and her husband spent more than a decade transforming their semi-wild, nearly six-acre back yard into gardens, only to discover the destructive nature of their work. Many of the birds, butterflies, and other animals had gradually vanished as they "civilized" the land. Although beautiful, the gardens had ceased to feed or shelter the abundance of life that once thrived there. To make them more hospitable, Stein studied ecology and discovered a new way of gardening. In a book as readable as it is practical, she shares her own experiences and the lessons she learned. As the following excerpt suggests, Noah's Garden offers an enchanting education in back-yard ecology and functional advice on how readers can renew their own small portion of the planet.

One can't advise Arizonans to plant their gardens around saguaro cacti that take forty years to reach chest height, insist to Kansans that prairie yards must annually be trampled by bison, sway Californians to the view that canyon fires are ecologically refreshing, or talk a Yankee into entertaining bears. The preservation or restoration of the wilderness is critical but not possible in one's own back yard.

One can, however, set aside a portion of this yard to plant, if not altogether naturally, then at least in a way not alien to the theoretical ecosystem in which one lives. The planting can be brought along through stages of succession or halted at a particular stage, and it can be encouraged to express apparent deficiencies in becoming ways that, since one is unaccustomed to the curly winter blades of switchgrass or the fuzzy yellow balls of a blossoming buttonbush, strike one as surprisingly exotic. So cleverly as to make one chuckle like a tickled baby, the suburban landscape can be teased to control its own pests, maintain its own soil, conserve its own water, support its own animal associates, and altogether mind its business with minimal interference from us.

But first one must make space.

The only way to do that is to take up less space oneself.

I read that the average lot size in suburban America has climbed to 10,000 square feet—roughly a quarter acre. Older lots tend to be smaller, but since house size has if anything grown faster than lot size, the pie of our land continues to be sliced pretty thin. On acreage subdivided into such portions, just the space required to maneuver excavating and roadbuilding equipment guarantees that little if anything will be left of the natural landscape; the cheapest way for a developer to leave the scene will be to throw grass seed in his wake. Into this intimidatingly blank surface the

homeowner incises a bed that cringes along the foundation of the house and perhaps plants a weeping ornamental. The finished effect, in which the lawn serves as background for some baubles of exterior decoration, seems so normal to us that it is hard to view a piece of land in any other way.

It seemed so normal to us that even though we bought a glutton's portion—and there was no lawn at all—we immediately proceeded to "develop" it by clearing the brush and mowing. We started near the house. First, a back lawn, then lawn to either side, then a strip along the driveway, then loppings and mowings to roll the green rug over the land in all directions.

The first indication that we were doing something wrong was the disappearance of the pheasants. In those early days, we had planted behind the house a kitchen garden encircled by a hedge of currants whose brilliant berries were regularly enjoyed by a mother and father pheasant and all their little chicks. The distance from the hedge to the unmowed, tall grass cover was about twenty feet—a critical distance, it seems, for when we mowed a broader strip, the pheasants were cut off from their breakfast as though by an invisible fence. The more we extended it the less we saw of them, and finally we realized that there were none.

In this way we were introduced to a rather different concept of space than is implied by developers' and Realtors' use of "spacious." Spaciousness to us means not only roomy in area but visually open, expansive, uncluttered, uniform in texture, low in growth, without impediment to view. To others, "spacious" is closer to the biblical paradox, "My father's house has many mansions." The diversity and complexity of vegetation creates a spacious landscape for animals by offering each kind the opportunity to earn its living in its unique way. Remove

From the book NOAH'S GARDEN: RESTORING THE ECOLOGY OF OUR OWN BACK YARDS by Sara Stein. Published by Houghton Mifflin Company, Boston. Copyright © 1993 by Sara Stein. Reprinted by permission of Houghton Mifflin; electronic publication by permission of the Wallace Literary Agency, Inc.

Michael McKeag's site plan for his lot in a tract development:

- a. meadow: sedges, grasses, wildflowers
- b. artificial pond
- c. wetland for bog plants
- d. hedgerow, mostly berrying species
- e. corner woodland

the pheasant's cover or the butterfly's flower and you have erased its space. The less variety of habitat the landscape offers, the less space there is until, when all is mowed, even an expanse the size of a golf course becomes just a hole in the world.

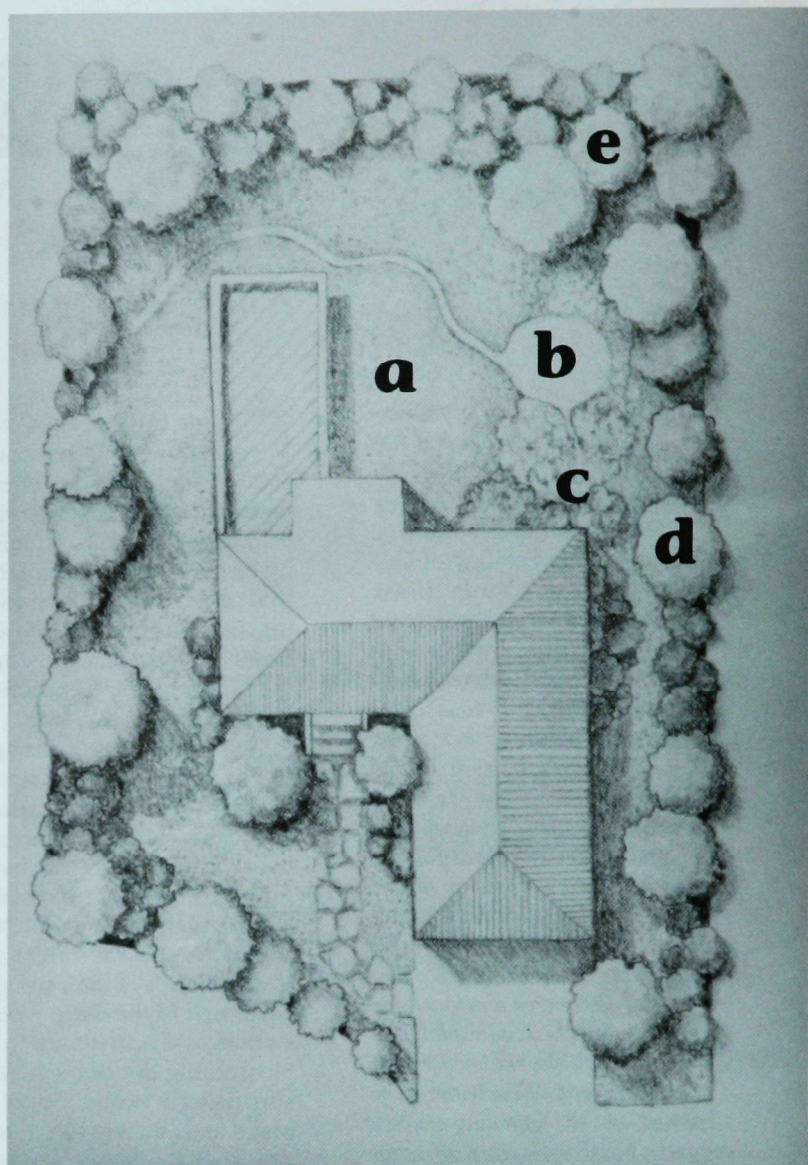
Suburbia has more holes already than a slice of imported Swiss, and the routes along solid ground are becoming more and more difficult for animals to negotiate. They (we, too) customarily take paths both for the efficiency that comes with familiar routes and, like pheasants under brush or us along bright streets, for safety from predators. When mother woodchucks place their children in separate dens, they visit them daily along a set itinerary. Mice and shrews take tiny paths through grass. Deer forged the trails that the Indians used and that later were often widened into roads. Certainly the pheasant family, exposed to hawks by our ignorant mowing, appreciated the "space" we created across their path about as much as I'd appreciate the space created by the Triborough Bridge's collapsing.

With animals' fear of exposure and fondness for paths in mind, we began to envision basic changes in our landscape. If ordinary garden design begins with the blank space of a lawn which is then cut here and there to create beds of taller plantings, we can aim for the obverse: a tall growth of grass, shrubs, and groves cut by mowed or mulched paths that occasionally open into clearings.

Once one begins to think in terms of paths, one realizes that they already exist, although invisibly. One doesn't walk across a lawn every which way, only in the particular ways that get one from place to place. Some of the places are spaces in the human sense of the word—open areas for sitting, eating, playing. These are the clearings. Others might be spaces in the more usual animal sense of resources that are visited regularly: garbage pail, woodpile, vegetable garden, sandbox.

It's astonishing how little land a family really uses and how much can be left as *Lebensraum* for others. Who ever uses the front yard? Who strolls along the fence? When does anybody sit in the corner of the yard?

I could have offered—indeed, I originally intended to—an illustration of a hypothetical suburban lot planted the way I envision. I was saved the trouble of having to make that drawing from scratch by a letter from a reader, Michael McKeag, who had enjoyed *My Weeds*. Not knowing I was working on this book but realizing from the first one the direction of my own gardening, Michael sent a drawing of the landscape plan for his one-eighth acre lot on a cul-de-sac in a tract house development in Oregon, along with a plant list and a map of the



Drawing by Sara Stein Copyrighted

neighborhood. . .

We don't have to—indeed, we neither can nor should—each provide all habitats, every sort of food. You plant nut trees and I'll plant spruce, you keep a berry thicket and I'll do the tall grass, or the bog, the woodlot, the crowds of fruiting shrubs and beds of wildflowers. But let us weave them together into something big enough to matter by connecting each patch with others at the corners and along the boundaries. This is the rich, new landscape; this is the new kind of gardener who asks not whether he should plant this ornament or another but which patch is missing from his community, how he can provide it, and how animals will move from his patch to the next.

This is the ark. □

YOU Can Make a Difference . . . The Earth is in your hands

A teacher's guide to hands-on environmental activities

At home, at school, at work, and in your community, you play an important part in protecting our health and our environment. Pollution is a problem that can't be solved by federal and local governments alone.

You—working by yourself and in cooperation with friends, neighbors, industry, government, nonprofit organizations, and schools and colleges—can make a difference. You and your students can plant trees, restore wildlife habitats, or launch a recycling program. Or you can work for cleaner streams and parks.

EPA encourages you to take a hands-on, common-sense approach to cleaning up the environment. The Earth is in your hands. Following are some suggestions you can use where you live to make a difference in our environment.

For information on activities specifically related to Earth Day, you may want to call or write either the EPA Headquarters Earth Day Office (phone: 202 260-1128; fax: 202 260-3384) or one of the regional EPA Earth Day contacts given on page 7.



Recycle paper, glass, plastic, aluminum, scrap metal, motor oil, and yard wastes.

Reuse, repair, and recycle as often as possible. Don't throw away what can be used again.

Avoid filling landfills with disposable items. Consider using reusable mugs, glasses, dishes, cloth towels, and sponges.

Save your leaves, grass, and bush clippings and use them as compost.

Participate in a recycling program. Encourage your community and your school to begin recycling.

Maintain and repair products. Donate usable materials to charities or thrift shops.

For further information, call:
U.S. Environmental
Protection Agency
Solid Waste Hotline at
800 424-9346 or
703 412-9810.

Be careful around surfaces covered with lead-based paint, and urge parents and workers to be cautious when children are nearby during renovation or repair work on old buildings.

Be especially alert for lead-based paint in older homes in poor repair or in need of painting. The fine dust from deteriorating old paint and dust created during renovation of older buildings may contain lead particles. This dust can travel throughout your house and even outside. Workers should wear protective clothing. Parents should seek expert advice before undertaking extensive do-it-yourself repairs.

Be sure drinking water does not contain harmful levels of lead or other contaminants. EPA has found lead and other unhealthy contaminants in drinking water in some areas. Especially if you live in an older house with lead pipes, it is a good idea to have your tap water tested to make sure it is safe.

Two drinking water precautions include: running the water until it changes temperature to ensure that stagnant water has been drained, and using only the cold-water tap for drinking and cooking, especially for making baby formula. Lead can slow children's physical and mental development and cause other neurological, reproductive, and circulatory problems.

For additional information, contact:

- U.S. Environmental Protection Agency Safe Drinking Water Hotline at 800 426-4791
- Your local water company
- Your community or county health department.

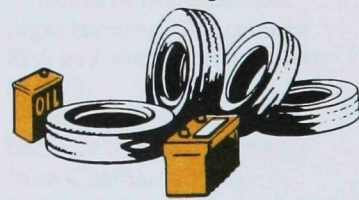


Buy energy-efficient automobiles and keep them tuned. A well-tuned engine makes your car, boat, or tractor safer for you and the environment. To help curb air pollution, carpool, bike, walk, or use mass transit when possible.

Disposal of auto waste is a significant problem. Used oil can contaminate water supplies; used auto batteries contain lead, lead sulfate, and sulfuric acid that can contaminate soil. Take used oil, batteries, and tires to a recycling center or an appropriate disposal facility.

For further information, call:

- U.S. Department of Energy at 800 523-2929
- Local Chambers of Commerce and local transit-oriented nonprofit organizations
- Your state and local environmental agencies
- Your chapter of the American Lung Association.





Apply pesticides such as insecticides and weed killers carefully if they must be used, and use as little as possible. Purchase only the amount needed, and follow label instructions carefully.

Use natural pest-control methods whenever possible.

Pesticides can pollute air, ground, and water. They can harm beneficial insects as well as wildlife, pets, and people. Improperly applied, they can spread beyond the intended area and into local water supplies. Reduce run-off by maintaining ample grass cover and shrubs.

For further information, contact:

- U.S. Environmental Protection Agency Office of Pesticide Programs 401 M Street, SW. (7501C) Washington, DC 20460 Phone: 703 305-7102
- National Pesticide Telecommunications Network at 800 858-7378
- Local garden clubs and nature centers
- Local poison control center (see front of your local telephone book).

Household hazardous waste—purchase products containing toxic ingredients only when you cannot avoid using them, and buy only as much as you need. Do not buy bulk quantities, as storing these at home can create a hazard.

Always read product labels to identify any hazardous constituents, and pay attention to container and disposal information. Whenever possible, avoid using products labeled with the words "DANGER," "WARNING," or "CAUTION." Use non-toxic alternatives. For example, clean your counter tops with baking soda instead of chlorinated cleaners.



Store hazardous products carefully. Where possible, recycle leftover hazardous products such as oil-based paint.

Find out your community's policy on disposal of hazardous waste. If the product should not go down the drain or into the rubbish, save it for a household hazardous waste-collection program. If a program is not in place, encourage your community to institute one.

For additional information, contact:

- U.S. Environmental Protection Agency
Solid Waste Hotline
at 800 424-9346
Or contact your state and local environmental agencies.

Environmental shopping—buy recycled and recyclable products. Seek out reusable or returnable packages.

Look for the recycling symbol on products you buy. Such symbols identify recycled or recyclable products.

Buy durable products—don't buy throw-aways. Borrow or rent things you use infrequently.

Avoid buying products that use unnecessary packaging—either plastic or paper. Use returnable or reusable containers. Look for pump dispensers rather than aerosol sprays. Buy rechargeable batteries for flashlights, toys, and household items.

Carry your own reusable shopping bag.

For additional information, contact:

- U.S. Environmental Protection Agency
Solid Waste Hotline
at 800 424-9346
Or contact your state and local environmental agencies.



Use less energy. Set back your thermostat, insulate your water heater, and buy energy-efficient appliances.

Setting back the thermostat not only saves money, it saves energy. It's an investment in yourself and your environment.

Insulation conserves our valuable fuel supply and saves you dollars. Consider insulating your home and school with fiberglass or cellulose fiber.

For more information, call:

- U.S. Department of Energy at 800 523-2929
- EPA Public Information Center at 202 260-2080 or 202 260-7751
- Your local utility company.



Plant trees, shrubs, and indoor plants. They replenish the Earth's oxygen supply and help curb the greenhouse effect.

Plant trees or bushes in your yard or neighborhood. Trees in your yard may reduce heating and cooling costs and curb soil erosion. In addition, they beautify your property and increase its value.

For further information, call or write:

- Your local garden club, nature center, or arboretum
- Global ReLeaf (American Forests) at 202 667-3300
- National Wildlife Federation Backyard Wildlife Habitat Program 1400 16th Street, NW. Washington, DC 20036 phone: 202 797-6800
- National Arbor Day Foundation 100 Arbor Avenue Nebraska City, NE 68410. □



Joseph K. Alexander, Jr.



Henry L. Longest II



Elizabeth A. Cotsworth

Joseph K. Alexander, Jr., is EPA's new Deputy Assistant Administrator for Science in the Office of Research and Development. He brings to EPA widespread experience in managing scientific programs at the NASA Goddard Space Flight Center (GSFC).

As GSFC's Assistant Administrator for Space Science and Applications (1993 to 1994), he was responsible for the Center's science management programs, space-science spacecraft operations, and data analysis while serving concurrently as Acting Chief of the Laboratory for Extraterrestrial Physics.

Previously, as Assistant Associate Administrator for Space Science and Applications in NASA's Office of Space Science and Applications (1987 to 1993), Alexander had oversight of research programs in Earth science, space physics, astrophysics, solar system exploration, life science, and microgravity science. He was Deputy NASA Chief Scientist from 1985 until 1987. He served from 1984 to 1985 as Senior Policy Analyst at the

White House Office of Science and Technology Policy in space science and technology in the civil service program.

Alexander was awarded NASA's Exceptional Scientific Achievement Medal for 1981; in 1991 he earned the Presidential Meritorious Executive Award.

He received a bachelor's degree (1962) in physics from the College of William and Mary and completed the Advanced Management Program at the Harvard Business School in 1991.

Henry L. Longest II is the new Deputy Assistant Administrator for Management in the Office of Research and Development. In this position, he will work with ORD's Assistant Administrator on planning, policy development, and the implementation of EPA's research and development programs.

Longest has extensive, diverse experience with EPA. As Director of the Office of Emergency and Remedial Response in the Office of Solid Waste and Emergency Response from 1985 to 1994, he implemented federally

funded emergency and long-term remedial cleanup activities of hazardous-waste sites under the Superfund program. Before that (1984), Longest was Deputy Assistant Administrator for the Office of Water, administering EPA's major water programs. These included water-quality standards, permits, construction of municipal wastewater treatment facilities, drinking water, and oceans.

From 1979 to 1984, he directed the Office of Water Program Operations; he previously served as Deputy Office Director (1976 to 1979).

Other Agency assignments included work for Regions 3, 5, and 6 (1975 to 1984) in implementation of the Clean Water Act. Longest was a hydraulic engineer with the U.S. Army Corps of Engineers before coming to EPA.

Among his numerous awards are the Presidential Meritorious Executive Award and the Presidential Distinguished Executive Award. He received a bachelor's degree in civil engineering from the University of Maryland in 1962.

Elizabeth A. Cotsworth is Deputy Director of the Office of Solid Waste (OSW).

Cotsworth held several positions in OSW before becoming Deputy Office Director. From 1991 to 1993, she was Deputy Director of the Waste Management Division. There she helped implement the RCRA land-disposal restrictions program, performed national waste-management-capacity analyses, and developed regulations on the combustion of hazardous waste. In the Permits and State Programs Division, she held positions that focused on policy for hazardous-waste permitting and technical assistance to states and EPA's regions. She served as the Chief of OSW's Program Support Branch from 1978 to 1982.

She joined OSW from EPA's Office of International Activities, where she specialized in the environmental activities of multinational organizations. She came to EPA as a management intern in 1973.

Cotsworth received a bachelor's degree in history from Chatham College in 1971 and a master's degree in government and foreign affairs from the University of Virginia in 1973.



Peter D. Robertson

Peter D. Robertson succeeds Michael Vandenberg as EPA's Chief of Staff. In this position, he advises the Administrator on policy and budgetary issues and serve as White House liaison on policy.

Robertson came to EPA last June, when he became Deputy Assistant Administrator of the Office of Solid Waste and Emergency Response. Before his appointment at EPA, he specialized in environmental and legislative law as an associate attorney at the law firm of Patton, Boggs, and Blow (1987 to 1994). His responsibilities in the environmental area included litigation, administrative law, and client counseling. Previously, he served a year as a law clerk at the firm of Paul, Weiss, Rifkind, Wharton, and Garrison (1986 to 1987), where he performed legal research. He also monitored major trade

legislation in Congress.

As a staff member for the Committee on the Budget at the U.S. House of Representatives (1981 to 1986), Robertson reviewed and analyzed the President's budget, briefed committee members and others on budget matters, and developed supporting documentation for the committee's recommended budget to the House of Representatives. He covered national security matters as well as transportation, administration of justice, and general government issues for the committee.

Robertson received a bachelor's degree in English from the University of Oklahoma (1978) and a law degree from Georgetown University Law Center (1987). □

LIST OF CONTRIBUTORS

Tom Benjamin
President
Environmental Alliance for
Senior Involvement
8733 Old Dumfries Road
Catlett, VA 22019
Phone and Fax: 703 788-3274

Charmaine Benz
7520 Ogemaw Drive
Mount Pleasant, MI 48858
Phone: 517 772-5700

Carol M. Browner (1101)
Administrator
Environmental Protection
Agency
401 M Street, SW.
Washington, DC 20460
Phone: 202 260-4700
Fax: 202 260-0279

Douglas Costle
Rural Route #2, Box 480
Woodstock, VT 05091
Phone: 802 457-1010
Fax: 802 457-3746

Bill Line
Manager of Education
Communications
National Wildlife
Federation
1400 16th Street, NW.
Washington, DC 20036
Phone: 202 797-6645
Fax: 202 797-6646

Raymond Loehr
c/o Science Advisory Board
Environmental Protection
Agency
Phone: 202 260-4126
Fax: 202 260-9232

Gaylord Nelson
Counselor
The Wilderness Society
900 17th Street, NW.
Washington, DC 20006
Phone: 202 833-2300
Fax: 202 429-3958

Roy Popkin (1704)
Writer/Editor
Editorial Services Division
Office of Communications,
Education, and Public
Affairs

Environmental Protection
Agency
Phone: 202 260-2069
Fax: 202 260-0231

William K. Reilly
Fifth Floor
1250 24th Street, NW.
Washington D.C. 20037
Phone: 202 891-8393
Fax: 202 293-9211

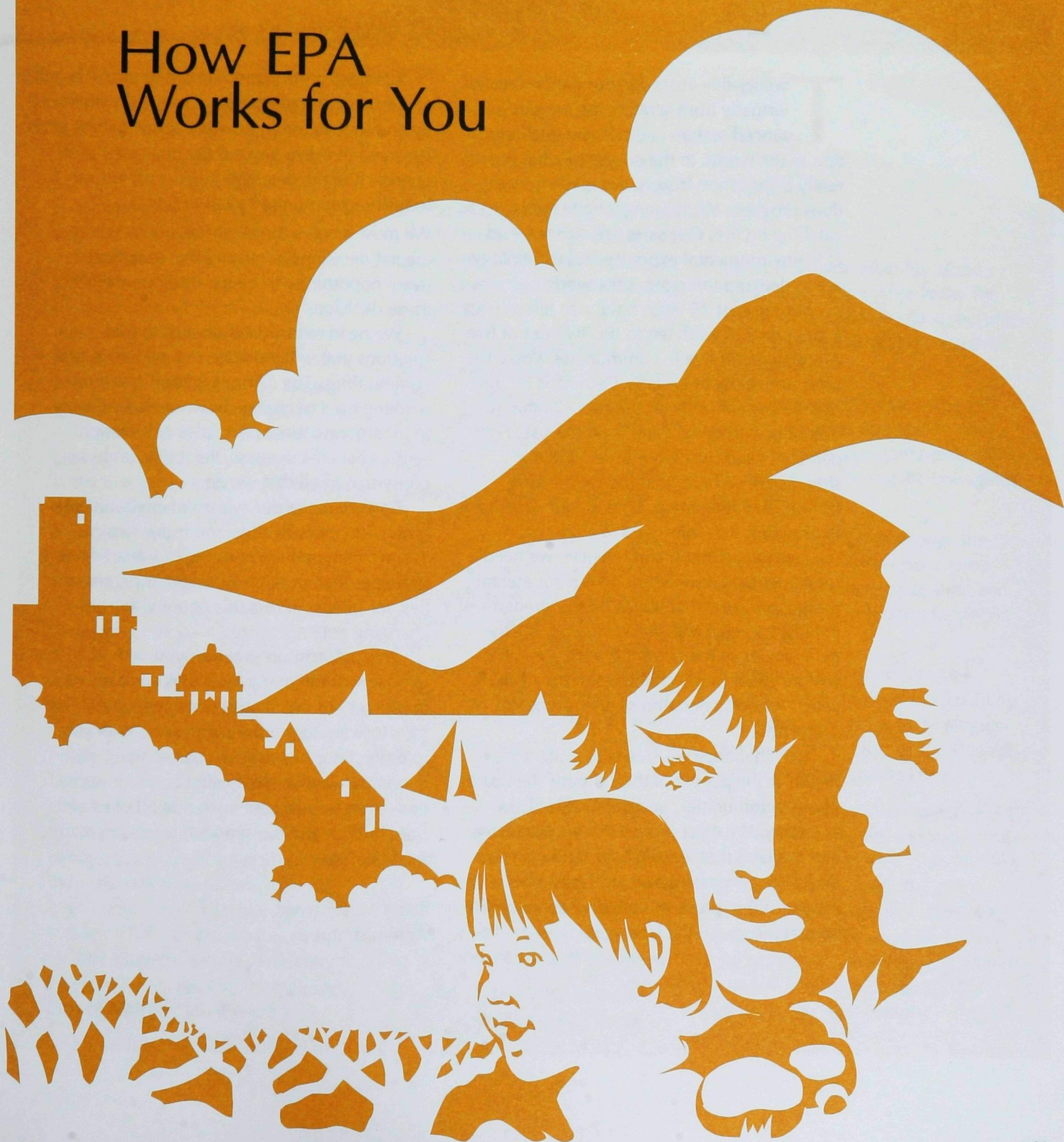
William Ruckelshaus
Chairman and CEO
Browning-Ferris Industries
P.O. Box 3151
Houston, TX 77253
Phone: 713 870-8100
Fax: 713 584-8686

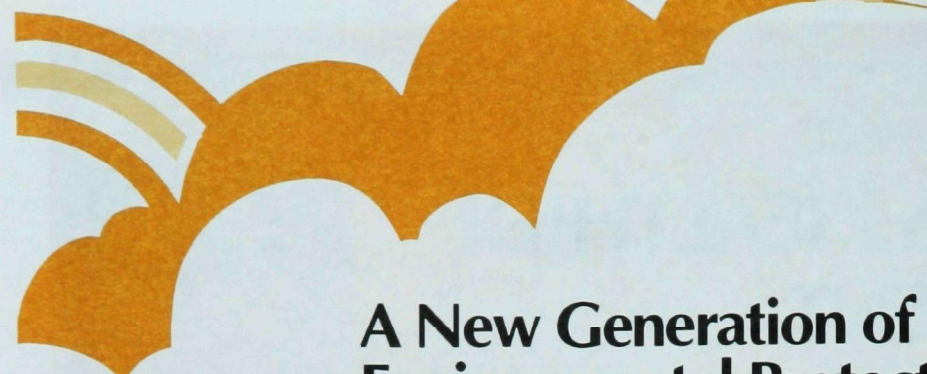
Robert Stavins
Associate Professor of
Public Policy
John F. Kennedy School of
Government
Harvard University
79 John F. Kennedy Street
Cambridge, MA 02138
Phone: 617 495-1820
Fax: 617 495-1635

Sara Stein
c/o Wallace Literary
Agency
177 East 70th Street
New York, NY 10021
Phone: 212 570-9090
Fax: 212 772-8979

CREATING A HEALTHIER ENVIRONMENT

How EPA
Works for You





A New Generation of Environmental Protection

Twenty-five years ago our nation created, virtually from scratch, the most advanced system of environmental regulation in the world. In the course of what is really a very short history, we made tremendous progress. We no longer have rivers catching on fire. Our skies are cleaner. And U.S. environmental expertise and technology are in demand throughout the world.

But the past 25 years have also left us with a great deal of work left to do. Two out of five Americans still live in communities where the air is unhealthy to breathe. Asthma is on the rise. Breast cancer is on the rise. Contamination of our drinking water is on the rise. Forty percent of our rivers, our lakes, and our streams are still too polluted for drinking, fishing, and swimming. One in four Americans lives within four miles of a toxic dump.

President Clinton and I believe we need a fundamentally new system of environmental protection—one that builds on the strengths of the last 25 years and seeks to overcome the deficiencies of the current system. One that will be equal to the challenge of the next 25 years. A new generation of environmental protection.

The challenge we face is to protect the health of the people of this country, the health of our communities, and the health of our economy. We must protect the air, the water, and the land that we all share. And we must do it with common-sense, cost-effective measures that produce the very best environmental results for the least cost.

We need a firm commitment to public health and environmental goals—combined with flexibility and innovation in how we achieve these goals. We need to move beyond the one-size-fits-all approach of the past. We must work industry by industry, community by community.

We must involve those who live with environmental decisions, to ensure that they have every opportunity to be a partner in making those decisions.

We need to build consensus, to find solutions that will work for real people in real communities. The Clinton Administration is working hard to change how we do business—to incorporate these principles of common sense, cost effectiveness, flexibility, and consensus in all that we do.

Can we make our system of environmental protection more flexible and more sensible? Yes, we can, and we're doing it. We are finding strategies that work for business, for communities, for people across this country. We are changing at EPA.

This publication provides you with an overview of the many tools EPA currently uses to protect our health and our environment. I look forward to continuing to work with you, to protect our health, our communities, our economy—and to do it using common-sense, cost-effective measures—so that all of us and our children and our grandchildren can reap the benefits.

Carol M. Browner
Administrator



A Common-Sense Approach

To protect public health and the environment more effectively and less expensively, EPA has launched a "Common Sense Initiative." This initiative looks at pollution on an industry-by-industry basis rather than using the pollutant-by-pollutant approach of the past. It involves everyone concerned with an industry—from manufacturers to community organizations—in fashioning new strategies and approaches that emphasize pollution prevention while providing cleaner, cheaper, and smarter protection for everyone. All aspects of environmental policy—from emissions reporting requirements to needed changes in environmental laws—are being looked at.

The Initiative has started by focusing on six pilot industries: iron and steel; electronics and computers; metal plating and finishing; automobile assembly; printing; and oil refining. Together, they represent nearly 11 percent of the Gross Domestic Product, account for one-eighth of all toxic emissions reported to EPA, and employ four million people. Some are high-tech, others industrial; some are dominated by large companies, others by small business. Teams for each industry include top-level EPA representatives, industry vice-presidents, representatives of national and grassroots

environmental organizations, unions, representatives of state environmental commissions and local government, environmental justice groups, and other agencies.

The teams examine all aspects of environmental regulation as it affects their industry and the environment, including:

- Reviewing regulations to get better environmental results at less cost through increased coordination among EPA programs. For example, by coordinating compliance, monitoring, and reporting cycles of clean water rules and clean air requirements, we can reduce confusion and expense. The Initiative also seeks to correct situations where differing regulations wind up simply moving pollutants from air to water, or air to land rather than eliminating them. This is part of EPA's total effort to comply with Presidential Order 12866 directing government-wide reexamination of existing regulations.
- Seeking ways to promote pollution prevention as a standard business practice and central ethic of environmental protection. Industries can change processes and expand their recycling efforts to reduce the pollutants they create.
- Looking at ways to improve environmental reporting requirements and the availability of the information so it will be easier for concerned citizens to obtain accurate information about pollution in their communities.
- Developing innovative ways to assist companies that seek to obey and exceed legal requirements while consistently enforcing the law against those that don't.
- Looking at ways to change the system through which permits are issued to encourage innovation and create more opportunities for public participation.
- Seeking opportunities to give industry the incentives and flexibility to develop innovative technologies that meet and exceed environmental standards while cutting costs.

The Common Sense Initiative will help us move beyond the traditional methods of the past 25 years and let us take the giant steps that are needed. By taking these steps, we are expanding the ways we protect our air, water, and ecology in preparation for the environmental challenges of the next century.

The page features a large, stylized illustration in the background. On the left, a golden silhouette of a state capitol dome with a dome and columns is visible. Below it, a white silhouette of a house with a chimney and two people standing in front of it is shown. The background is a light blue gradient with some faint, abstract shapes.

Working with Partners to Protect Our Environment

The Environmental Protection Agency leads the federal government's effort to create a healthy environment, yet it is but one link in a chain of efforts. EPA works in partnership with state, county, municipal, and tribal governments to use a range of tools to protect public health and the environment. State and local standards may exceed federal standards, but cannot be less stringent. EPA is committed to working with states and municipalities so that they can implement federal standards consistently but use flexibility and common-sense approaches in tailoring those standards to local needs.

All states have environmental agencies; some are separate agencies and others are part of state health departments. These state agencies are responsible for implementing and monitoring many Clean Air Act provisions. Enforcement of drinking-water standards is usually a state or local responsibility. Many enforcement actions require the resources of both federal and state authorities.

In some areas, such as food safety and radiation containment, EPA sets the standards, but implementation and enforcement may be the responsibility of another federal agency. And within the federal government, EPA sees to it that projects are subject to environmental evaluation before they are approved. EPA also oversees and enforces the cleanup of hazardous waste at federal facilities.

Under many of the laws it implements, and in keeping with the EPA philosophy of citizen participation, the Agency makes extensive efforts to involve the public in environmental protection. Some laws specifically invite public monitoring. Others allow individual citizens to bring legal action against polluters or to bring violations to the attention of environmental agencies. Because an informed, involved local community is essential to protecting the environment, EPA implements the community right-to-know laws by providing the public with information on the types and levels of toxic releases in their communities. Called the Toxic Release Inventory, this database is available in public libraries nationwide. EPA also conducts an extensive public education campaign so those who must live with federal environmental decisions—businesses, environmentalists, states, cities, small communities—have every opportunity to work with their government to make those decisions.

Achieving Scientific Excellence

Sound science and technology provide the basis for EPA decision making, and guide the Agency's use of risk assessment, risk management, enforcement, and other tools and strategies to prevent and solve environmental problems.

The Agency's scientists and engineers are concerned with issues that may be world-wide or as local as a neighborhood "cancer cluster." EPA has reorganized its laboratories and research and development offices into three new national laboratories and two national centers that assist the Agency with tasks ranging from basic research on potential impacts of global warming to identifying pollutants that cause a fish kill or contaminate a community's drinking water.

EPA requires the best available scientific and technological knowledge and data to define and anticipate environmental issues, determine trends in environmental quality, and point to the best ways to solve and prevent problems.

To ensure that the Agency can draw on the expertise of the nation's best and brightest researchers in its scientific endeavors, EPA has created the *STAR Program* (Science To Achieve Results). STAR provides graduate students in science and engineering with fellowships for research. In addition, the STAR program has expanded grants for peer-reviewed extramural research on environmental subjects at the nation's universities and non-profit institutions. These grants and fellowships will

provide EPA with even more access to cutting-edge research and information.

EPA research and development directly support our programs and enforcement investigations. They also provide the scientific foundation for newer environmental protection approaches—such as innovative technology, pollution prevention and ecosystem-wide protection—and help identify the basis for environmental justice concerns. Our researchers collaborate with other federal agencies, universities, and industries in various studies and investigations, and disseminate their findings to national and international communities.

EPA focuses on research that addresses central issues in environmental decision making, such as:

- What are the most effective ways to prevent pollution?
- What are the levels and national distributions of pollutants that affect people and the environment?
- What are the major and minor contributors to the public's overall exposures to pollutants?
- What are the alternative strategies and relative risks, costs, and benefits of such strategies to ensure a clean environment?

EPA has a Science Advisory Board, established by Congress as a panel of eminent non-EPA scientists who counsel the Agency on scientific issues and review the quality of its research.



POLLUTION PREVENTION

Perhaps the greatest lesson EPA has learned in the past 25 years is that preventing pollution before it starts is the cleanest, cheapest, and smartest solution for the environment and public health. This approach is a top priority for EPA, and is far better than waiting to clean up pollution after the fact. It is a common sense, cost-effective approach to protecting the health of our communities.

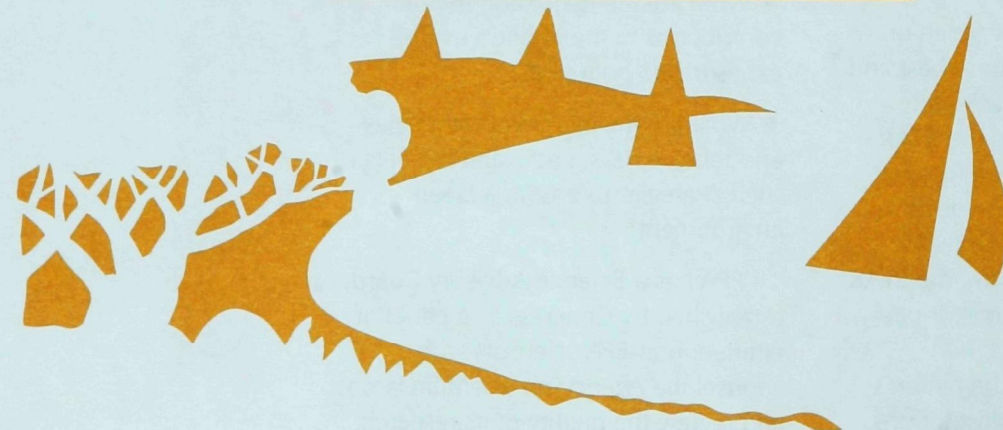
Pollution prevention is incorporated into virtually every EPA program (and supported by a special Act of Congress). EPA promotes innovative technologies and procedures that will not just clean up pollution, but prevent it from occurring in the first place.

Voluntary Programs Serve as Prevention Models

EPA conducts a number of voluntary programs to encourage business and industry, local governments, and individuals to prevent or reduce pollution generated by their daily activities. The rewards for participation are two-fold: lower costs of daily operations, and public recognition as good environmental models that other organizations can follow.

Under the **Green Lights** program, businesses and industries, local governments and other agencies and institutions are encouraged to convert their lighting systems to bulbs and fixtures that use less electricity. By the end of 1993 more than 1,180 participants took actions that reduced the demand for power, thus cutting pollutant emissions from power plants. Many utilities urge customers to do likewise in their homes or small businesses.

EPA's **33-50** program is a strategy for changing the way government and





industry work together. It provides incentives to lessen industrial output of high-priority toxic wastes—by 33 percent in 1992 and 50 percent in 1995. Since 1991, over 1300 companies have joined and committed to reductions of 355 million pounds of toxic waste. The goal is to eliminate more than 740 million pounds of pollutants by the end of 1995.

Natural Gas Star encourages natural gas producers to adopt practices that can profitably reduce emissions of methane, the main component of natural gas.

WAVE, Water Alliances for Voluntary Efficiency, encourages hotels and motels to install water-saving techniques and equipment.

The **Energy Star** program encourages manufacturers to develop and produce appliances and other products that use less energy. Those that meet such goals can use EPA's Energy Star emblem on their products.

Other programs are being developed for different industries. **Climate-Wise** encourages and recognizes voluntary efforts to reduce greenhouse emissions.

Pollution prevention by farmers and ranchers is sought through soil conservation, integrated pest management, and nutrient and animal waste management. **AgStar** develops new technologies that can profitably contain and utilize greenhouse gases from animal manure. AgStar's goals are to eliminate or sharply reduce the amount of agricultural pollutants that reach

surface or underground water sources and to decrease the amount of greenhouse gases released into the atmosphere from poorly managed agricultural wastes.

A **Cool Communities** program encourages the planting of trees in patterns that shade residential areas so that less energy is required for heating and cooling.

The **Waste Wise** program encourages industry to reduce the amount of packing materials used.

EPA encourages recycling to reduce the amount of household and commercial waste that ends up in already overburdened landfills. Approximately 25 percent of the nation's solid waste is now being recycled through more than 4,000 community-based, business, and government recycling programs.

The Agency also encourages composting of yard wastes for use as fertilizers by home-owners and communities.

EPA coordinates the recycling program for all federal agencies, which are required by Presidential Executive Order to recycle and to purchase paper and other items made with recycled components. EPA conducts special recycling programs for used motor oil and batteries.

Keeping the Environment Safe from Health Threats

Some chemicals and other substances are so dangerous to public health and the environment that EPA bans or severely limits their use. For example, EPA banned the use of **lead** (which poses a health threat, especially to children) in gasoline, paint, water coolers, and in solder used in residential and school plumbing. These actions have helped to reduce the levels of lead in children's blood, thus reducing the incidence of mental and development health problems. Most recently, EPA urged purchasers of new submersible well-water pumps with brass or bronze parts to test the water for lead before turning them on.

Because pesticides by their very nature tend to be toxic, their use should always be restricted to the particular uses and directions on the label. EPA bars or severely limits agricultural or home use of more than 50 pesticides believed to be significant health threats, among them once widely-used products containing DDT, chlordane, heptachlor, endrin, and 2,4,5 T. The Agency is reevaluating hundreds of currently registered pesticides to see if they should be banned or their use restricted.

EPA has ordered a stop (by 1996) to production of **CFCs** (chlorofluorocarbons) and certain other compounds emitted into the atmosphere, which threaten the earth's protective ozone

protective ozone layer. CFCs are widely used as refrigerants and in home and car air conditioners. The Agency has also ordered the phasing out of halons, used in fire extinguishers. EPA banned use of **PCBs** in transformers and elsewhere because they contain carcinogens that are a threat to those exposed by accidents or fires. A number of other compounds, including dioxin, are now under review. EPA scientists review all proposed formulations of commercial compounds and will approve them only if data indicate they will not cause unreasonable harm.

EPA banned dumping of garbage and other solid waste into oceans and coastal waters to protect seashore recreation, the fishing industry, and all creatures that live in the sea. The United States joins other nations in enforcing international agreements restricting dumping at sea.

New Approaches to Pollution Prevention

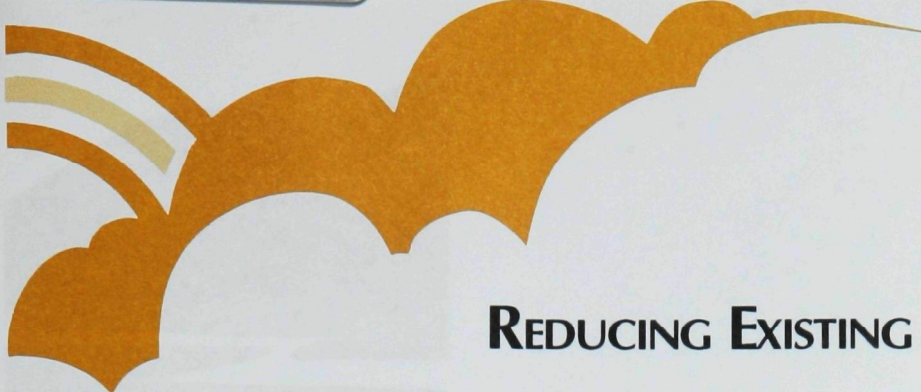
EPA also advances pollution prevention by providing our partners in communities, local governments, business, and industry with information that helps them apply research findings to actual practice. EPA promotes a number of different technologies and approaches, and provides grants for pilot and demonstration projects.

Through information exchanges and conferences, EPA promotes the sharing of information on how companies have successfully altered production processes and expanded recycling efforts to prevent pollution.

EPA closely monitors the development of biotechnology and evaluates the safety of genetically modified products, such as biological pesticides or plants resistant to specific crop diseases, before they are tested in the field and distributed. When they are proven safe, EPA encourages their use as an alternative to potentially harmful chemical pesticides.

EPA widely promotes **integrated pest management (IPM)**, an approach that incorporates a variety of pest control methods ranging from products derived from biologicals and biotechnology to water conservation, organic gardening, and judicious use of pesticides. IPM can be incorporated into pest control for farming and lawn care, as well as in schools and homes. State government agencies, environmental groups, and gardening and farm organizations join EPA in this effort.





REDUCING EXISTING POLLUTION

Prevention can reduce or even eliminate many environmental problems. EPA will continue to do what it can to reduce the amounts of pollutants that do invade our air, land, and water. And EPA will do so in ways that make economic and environmental sense.

Environmental Quality Standards

Setting limits on pollutants to which the public can be exposed is a basic EPA role. Standards set by EPA are designed to reduce levels of contaminants in the air and drinking water, and in industrial emissions and municipal waste streams. They also cover the amount of pesticide residue allowed on food, maximum allowable levels of certain compounds in some industrial products, safe levels of exposure to radioactivity (including radon gas and accidental leaks), automobile emissions, and technology to limit pollutant releases. These standards are used to measure the effectiveness of control technologies and other approaches to limiting the release of pollutants. EPA also conducts scientific assessments on the public health risks associated with these pollutants, and the costs and benefits of proposed approaches, where applicable. Before they are finalized they are subject to public comment and discussions between EPA, industry, state and local governments, labor unions, environmental groups, and other parties.

These standards become the underlying framework for a variety of EPA approaches to environmental protection:

EPA works with states to help them adopt plans for **reducing air pollution** in areas where it exceeds federal standards. In many cities where air



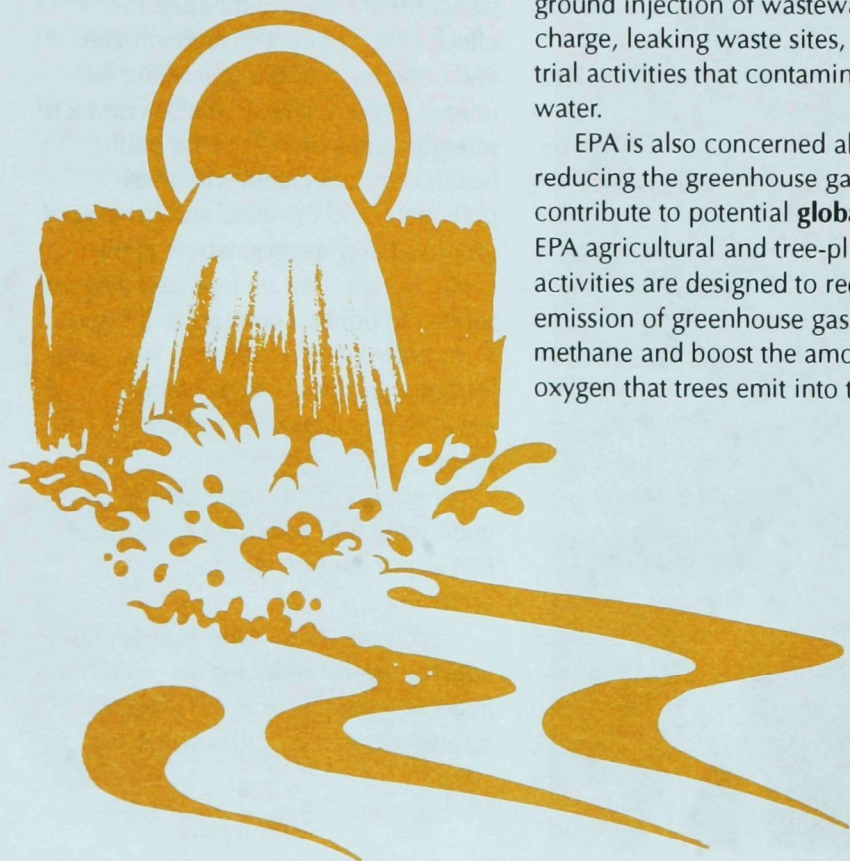
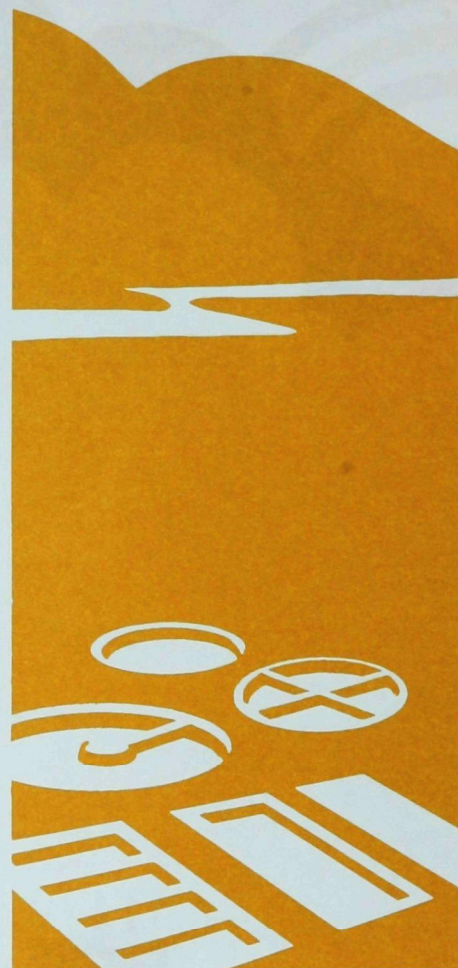
pollution has been excessively high, concentrated effort by state and local governments, industry, and citizens has resulted in cleaner air.

The goal of EPA's water-quality and wastewater-treatment standards is for all Americans to enjoy safe, reliable water for drinking and outdoor activity. These standards limit the discharge of pollutants into our rivers, streams, lakes, and offshore waters. Where the water is used for human consumption, specific rules limit various kinds of bacterial and chemical contamination and require users to be notified by the supplier if safe levels are exceeded. Other requirements apply to waters used for fishing and recreation. These

laws are enforced by state and tribal governments, and supported by EPA through grants and technical assistance.

The Agency also establishes criteria for **wastewater treatment** plants and limits on the pollutants flowing from municipal treatment systems into surface and underground waters. EPA has helped local communities nationwide to upgrade their wastewater treatment systems and continues to do so through federal loans to state revolving loan funds. Wastewater treatment programs have helped clean up many major U.S. waterways that were severely polluted, such as the Potomac River in Washington, DC. Likewise, EPA restrictions enforced by the states **protect community wells** from pollution resulting from underground injection of wastewater discharge, leaking waste sites, and industrial activities that contaminate groundwater.

EPA is also concerned about reducing the greenhouse gases that contribute to potential **global warming**. EPA agricultural and tree-planting activities are designed to reduce the emission of greenhouse gases like methane and boost the amount of oxygen that trees emit into the air.



Industrial Emissions

To protect public health from toxic air emissions, particularly in communities close to industrial facilities, EPA air-quality regulations sharply limit pollutant emissions from public utilities and other industrial plants. For example, EPA has reduced by almost 90 percent the toxic air emissions from the chemical industry, one of the biggest industrial sources of these pollutants. This far-reaching Clinton Administration effort is the biggest reduction of air toxics in EPA's history.

Under recent changes in the clean-air law, industries may "trade allowances", which means an industry that has achieved a better-than-required level of pollution reduction can trade or sell its allowances to another that is having difficulty doing so. The result is an equilibrium that keeps total emissions in a region within legal limits.

Industries are also required to utilize the best available technology to eliminate or reduce toxic emissions at the stack, exhaust vent, or effluent discharge point.

Waste Incineration

Nearly five million tons of hazardous waste are incinerated each year in our nation. EPA encourages industry to reduce waste, but is also strengthening its oversight of existing facilities and tightening permit requirements for new ones. New rules governing waste combustion will hold incinerators to rigorous standards reflecting the best available science, require risk assessments for new permits, and mandate a standard for dioxin and more stringent controls on metals to better protect public health.



Motor Vehicle Emissions

As part of its total effort to improve air quality, EPA programs seek to reduce the impact of motor vehicles on the environment. These include setting emissions standards for all new cars, trucks, and buses, and working with states and localities to establish programs that monitor the effectiveness of vehicle pollution-control systems.

In conjunction with the Departments of Transportation and Energy, EPA collects fuel economy information on all new cars and publishes annual **Miles-Per-Gallon (MPG)** ratings for all

models sold in the United States so that purchasers can make environmentally informed judgments about which car to buy. EPA also encourages the development and use of new, less-polluting gasoline formulations and use of **alternative fuels** such as liquid natural gas, ethanol, and electric batteries. The Agency also promotes the use of vapor-catching nozzles on gasoline pumps and has recently ordered the installation of vapor collectors in cars and light trucks to capture emissions from gasoline that evaporates while the engine is running.

Pesticides

All pesticide products created for use by homeowners and farmers in the United States must be **registered** by EPA. This process includes extensive testing to determine the toxicity of the product and its potential for threatening the health of people, wildlife, and the environment. Laws and regulations apply to all pesticides, including disinfectants, fungicides, insecticides, and weed-killers.

When a pesticide is registered by EPA, the manufacturer is required to label it with specific instructions as to use, disposal and special precautions. The label requires agricultural employers to provide their employees with the many safety protections. If later scientific developments indicate unsuspected dangers, the registration can be suspended, canceled, or amended.

EPA is expediting re-examination of the hundreds of pesticides registered during the Agency's early years using sound scientific standards.

The Agency sets specific limits on pesticide **residues in food**, the limits depending on toxicity and quantity of those residues.

Once EPA establishes the levels of pesticide that may remain on food, the Food and Drug Administration (FDA) and the US Department of Agriculture (USDA) monitor the levels.





Toxic Chemicals

Under the Community Right-to-Know laws certain manufacturers, storers, transporters, and users are required by EPA to report annually the amounts of several hundred toxic chemicals they release into the environment. The companies must also report information about off-site transfers, waste management, and efforts to reduce the quantities of toxic waste they generate or have on hand. EPA compiles the report in an annual **Toxic Release Inventory** that is made available to state and local public safety authorities, public libraries, emergency planners, citizen groups and other concerned parties.

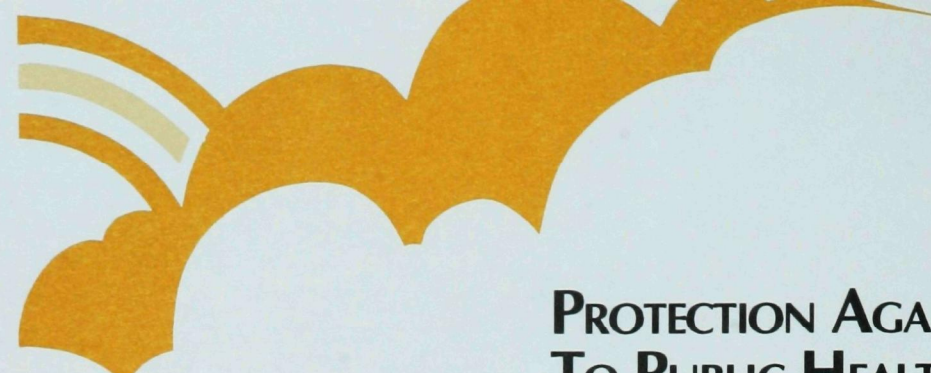
To protect the safety of underground water supplies, the Agency also regulates the safety of **underground storage tanks** such as those at gasoline stations or that hold various chemicals. Storage tank owners must meet safety requirements and are responsible for monitoring leaks and reporting them to local authorities. Owners also must take appropriate action if a leak occurs or when a tank is replaced or abandoned.

Polluted Runoff

The biggest remaining source of water pollution is the **polluted runoff** resulting from pesticides, fertilizers, animal wastes, and other chemical compounds that wash into streams from nearby fields and roads. This polluted runoff can make the water unfit for drinking or recreation. The pollutants also can wind up in estuaries or lakes hundreds of miles away, where they can kill off or contaminate shellfish crops, ruin wildlife habitats, and curtail the livelihoods of commercial fishermen.

EPA helps communities identify sources of polluted runoff and upgrade their storm sewers and urban runoff controls to reduce contamination. The Agency also provides technical assistance and guidance to farmers to help them keep waste out of nearby waters.





PROTECTION AGAINST THREATS TO PUBLIC HEALTH AND THE ENVIRONMENT

Some threats to public health and the environment cannot be removed by banning use or installing control technology. For example, 73 million Americans live near the country's 2,700 worst hazardous-waste sites, potentially endangered by substances discharged or dumped over many decades. And sometimes there are accidents—massive oil spills or chemical clouds or nuclear accidents—that potentially can kill or injure human beings, wildlife, and plants.

Since such threats cannot always be prevented, EPA works to limit, isolate, or contain them to protect the health of the public and the environment.

Superfund

Superfund is a national hazardous-waste cleanup program that focuses on the most dangerous inactive contaminated sites in the United States. The program was enacted by Congress to remove wastes at those sites that pose the gravest potential threat to public health. EPA encourages public participation in determining the cleanup goals and future uses of the sites and provides assistance to community groups to help them evaluate the cleanup options available.

Through its **Brownfields Action Agenda**, EPA is working in partnership with state and local governments, communities, industries, and small businesses to clean up contaminated sites in cities across the country to bring them back to life, remove a blight on the neighborhood, and create jobs. EPA has lifted the Superfund designation

from 25,000 sites around the country.

The Agency also sets standards for **waste storage and treatment** facilities, and works with states to monitor their performance in preventing dangerous environmental leaks and releases and better protect public health.

Toxic Spills And Leaks

EPA responds to environmental accidents by providing leadership and technical support for emergency cleanup operations. Where spills occur on navigable rivers or other waters, EPA provides support to the Coast Guard, which is the lead agency under such circumstances, and may direct or assist in efforts to contain or clean up oil or other spilled pollutants.

In natural disasters, EPA provides technical guidance and support in protective and cleanup efforts as part of the Federal Emergency Response Plan. EPA works in partnership with state and other federal agencies to monitor air, water, or other pollutants that result from unexpected emergencies or accidents. EPA also supports, with training, guidance, and operational materials, the development of State Emergency Response Commissions and local Emergency Planning Committees required under Superfund amendments.





International Scope

The environment has no national boundaries. Global warming, the thinning ozone layer, chemical contamination, and fallout from nuclear accidents are examples of problems that must be confronted by the international community. So too, are regional concerns about ocean dumping, dwindling rain forests, and the transport of hazardous waste across national borders.

EPA is a major participant in the international environmental protection effort. Agency specialists have been assigned to provide American expertise to other governments. EPA works with the State Department, United Nations agencies, and other international groups on research and technology exchange, and training for environmental agency officials.

In North America, EPA works with the Canadian government through a Joint International Commission on pollution of the Great Lakes. EPA works with the governments of Mexico and Canada to ensure successful implementation of environmental aspects of the North American Free Trade Agreement. EPA experts and their Mexican counterparts are jointly seeking to upgrade environmental protection and water supplies in communities along the US-Mexican border.



Strong Enforcement

EPA's goal is to ensure that enforcement and compliance assurance programs work to protect public health in communities across the country. It is EPA's aim to help businesses comply with the law in the most common-sense and cost-effective way possible.

Enforcement may take the form of promoting compliance with regulations, negotiating schedules for achieving required standards, and, ultimately, civil or criminal proceedings in federal court.

Increasingly, the courts have shown they are willing to punish willful polluters with stiff penalties or with criminal convictions, substantial fines and prison sentences. Fines have run as high as 22 million dollars. In 1994, EPA brought a record 2,247 criminal and civil actions for fines and

penalties and referred 220 criminal cases to the Justice Department for prosecution. Another 1,597 cases were brought before EPA administrative law judges.

EPA encourages the business community to come forward and receive assistance in complying with the law. The Agency has replaced the pollutant-by-pollutant compliance approach of the past with a common-sense comprehensive approach. The cross-media enforcement program complements EPA's Common Sense Initiative—the new industry approach that brings industries to the table to work with the Agency to find the best blueprint for pollution prevention.

EPA also oversees cleanups at federal installations and can penalize federal agencies for failing to clean up sites or spills.

Carrying Out the Law

Among the environmental laws enacted by Congress through which EPA carries out its efforts are:

1938 Federal Food, Drug, and Cosmetic Act (last amended 1988)

1947 Federal Insecticide, Fungicide, and Rodenticide Act (last amended 1988)

1948 Federal Water Pollution Control Act (also known as the Clean Water Act) (last amended 1988)

1955 Clean Air Act (last amended 1990) 1965 Shoreline Erosion Protection Act

1965 Solid Waste Disposal Act (last amended 1988)

1970 National Environmental Policy Act (last amended 1975)

1970 Pollution Prevention Packaging Act (last amended 1983) 1970 Resource Recovery Act

1971 Lead-Based Paint Poisoning Prevention Act (last amended 1988)

1972 Coastal Zone Management Act (last amended 1985)

1972 Marine Protection, Research, and Sanctuaries Act (last amended 1988)

1972 Ocean Dumping Act

1973 Endangered Species Act

1974 Safe Drinking Water Act (last amended 1994)

1974 Shoreline Erosion Control Demonstration Act

1975 Hazardous Materials Transportation Act

1976 Resource Conservation and Recovery Act

1976 Toxic Substances Control Act (last amended 1988)

1977 Surface Mining Control and Reclamation Act

1978 Uranium Mill-Tailings Radiation Control Act (last amended 1988)

1980 Asbestos School Hazard Detection and Control Act

1980 Comprehensive Environmental Response, Compensation, and Liability Act

1982 Nuclear Waste Policy Act

1984 Asbestos School Hazard Abatement Act

1986 Asbestos Hazard Emergency Response Act

1986 Emergency Planning and Community Right to Know Act

1988 Indoor Radon Abatement Act

1988 Lead Contamination Control Act

1988 Medical Waste Tracking Act

1988 Ocean Dumping Ban Act

1988 Shore Protection Act

1990 National Environmental Education Act

Be nice to yourself, or to someone else special

The \$7.50 Gift that
keeps right on giving!



INFORMATION, NEWS, TRENDS, ISSUES, VIEWPOINTS, PEOPLE, POLICIES,
AND PROGRAMS —from local to global

If you are currently a subscriber, you know how the special people on your list, friends, college students, or family members, will appreciate your thoughtfulness in sending them a gift subscription to **EPA JOURNAL**.

If you're not a subscriber, it's about time you were nice to yourself.

What else can you give or receive that comes four times a year, is dedicated to making ours a better world, and is **ONLY \$7.50**? **EPA JOURNAL** makes for an imaginative, educational, year-round gift and is a real bargain, too!

Simply check the boxes on the other side and fill in the name and address of the person you want to receive a subscription.

MORE THAN ONE? You can copy and fill out the reverse side of this card for as many subscriptions as you wish to give.

WINNER! **EPA JOURNAL** took **FIRST PLACE** in the 1991 "Blue Pencil Competition," a prestigious Award that makes a subscription even more valuable.

EPA JOURNAL ORDER FORM

Order Processing Code * 5401

☐ **YES**, enter ____ subscriptions to **EPA JOURNAL** for \$7.50 per year (\$9.40 foreign).
The total cost of my order is \$ _____. Price includes regular domestic postage
and handling and is subject to change.

Company or personal name

Please type or print

Additional address/attention line

City, State, ZIP Code

Purchase Order No.

Daytime phone including area code

May we make your name/address available to other mailers?

☐ YES

☐ NO

Please Choose Method of Payment:

☐ Check payable to the Superintendent of Documents

☐ GPO Deposit Account

☐ Visa or MasterCard Account

Credit card expiration date

To fax your orders (202) 512-2233

Mail to:

New Orders

Superintendent of Documents

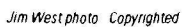
P.O. Box 371954

Pittsburgh, PA 15250-7954

Thank you for your order!

Authorizing Signature

This form may be photocopied.



EJED EPA 175/N-95-001
Earth Day 1995

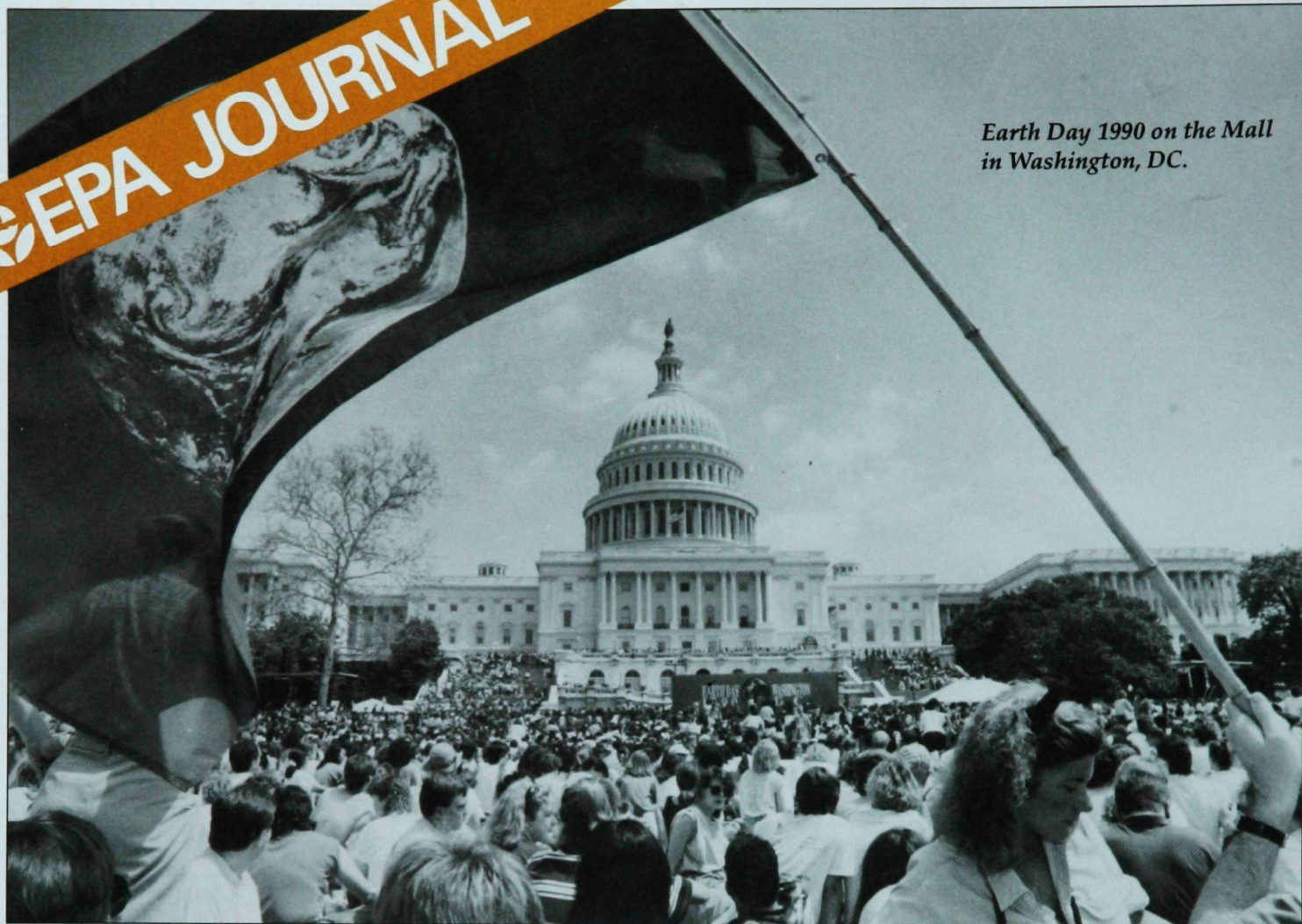
Due	Name & Phone	Mcode
-----	--------------	-------

EJED EPA 175/N-95-001
Earth Day 1995

Due	Name & Phone	Mcode
-----	--------------	-------

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Prevention, Pesticides & Toxic Substances
OPPTS Chemical Library (7407)
401 M Street SW
Washington DC 20460
(202) 260-3944

*Earth Day 1990 on the Mall
in Washington, DC.*



Wide World photo. Copyrighted

U.S. Government Printing Office
Superintendent of Documents
Washington, DC 20402

Official Business
Penalty for Private Use \$300