Mid-Atlantic States | State of the Environment | 1997

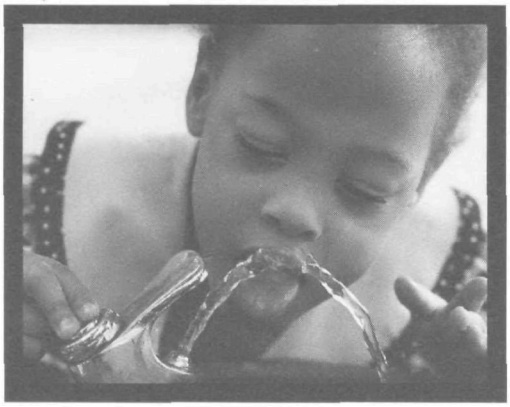
U.S. Environmental Protection Agency
Region III / Mid-Atlantic States
#EPA-903-R98-010 / April 1998

A Cleaner,
Safer and
Healthier Place
To Live,
Work and Play

DELAWARE • DISTRICT OF COLUMBIA • MARYLAND • PENNSYLVANIA • VIRGINIA • WEST VIRGINIA

AL MORRIS

STEPHEN C. DELANEY



STEPHEN C. DELANEY

DAVID FATTALEH, WEST VIRGINIA
DIVISION OF TOURISM & PARKS

IN A POLL OF 1,200 ADULTS BY THE PEW CENTER FOR THE PEOPLE AND THE PRESS, 60 PERCENT SAID THEY WOULD PAY 25 CENTS MORE FOR A GALLON

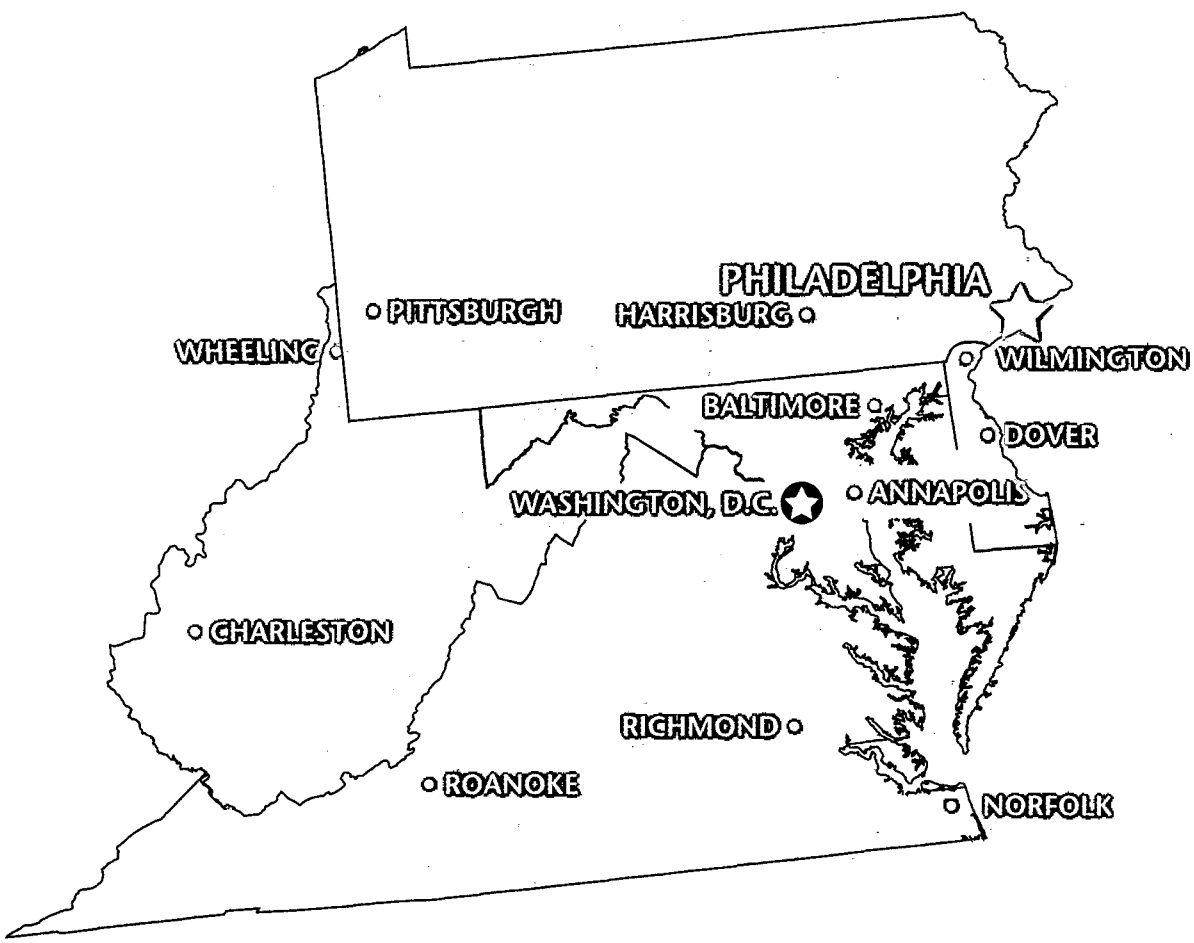
The U.S., with only
five percent of the
world's population,
generates 22 percent
of the world's
air pollution.

OF GAS IF IT WOULD HELP SIGNIFICANTLY REDUCE THE EFFECTS OF GLOBAL WARMING • ONE DEATH IN EIGHT IN CHINA IS LINKED TO AIR POLLUTION

From its Philadelphia regional headquarters and satellite offices in Annapolis, Pittsburgh and Wheeling, Region III serves the mid-Atlantic states of Delaware, Maryland, Pennsylvania, Virginia and West Virginia, and the District of Columbia.

REGIONAL HIGHLIGHTS:

* Population — 26,831,000, 10.2% of U.S. total.
* Gross regional product of $519.8 billion, 10.4% of U.S. gross national product.
* 120,296 square miles, 3.4% of U.S. total.
* 303,357 miles of highway, 7.8% of U.S. total.
* 19,918 million motor vehicles registered, 10% of U.S. total.
* 231.6 billion vehicle miles driven, 9.8% of U.S. total.
* 7,084 square miles of water, 3.9% of U.S. total.
* 31,940 manufacturing establishments, 8.4% of U.S. total.
* Consumed 8,085 trillion BTUs of energy, 9.6% of U.S. total.
* 3,700 square miles of wetlands, 0.9% of U.S. total.



ACCORDING TO A NEW YORK TIMES POLL, 65 PERCENT OF THE PUBLIC BELIEVE THE U.S. SHOULD TAKE STEPS TO CUT ITS OWN EMISSIONS

Anne Duffield, A fifth-grade student at Drew/Pyle elementary school in Wilmington, Delaware, gets a personal computer lesson from Americorps volunteer Ron Osborne as W. Michael McCabe, EPA's mid-Atlantic Regional Administrator, (standing) and Delaware Governor Thomas R. Carper look on. When the Philadelphia regional office upgraded its computers, those determined "excess" were given to educational institutions throughout the region.

This was a good year for the Agency, with impressive accomplishments in protecting public health and the environment. The nation's economy is the stongest it has been in a generation, and our environment is the cleanest in a generation.

Those who claimed that environmental protection and economic growth are incompatible have been discredited. Our economy is the envy of the world, which is due in part to the industrial innovations developed to reduce pollution.

The Clinton/Gore Administration has maintained its commitment to protecting and preserving our natural resources, ensuring public health, and moving forward with common-sense reforms while protecting the planet.

Under the leadership of EPA Administrator Carol M. Browner, strong new clean air standards set in 1997 for soot and smog will prevent 15,000 premature deaths per year and improve the lives of millions of Americans who suffer from respiratory illnesses. And through a comprehensive plan involving the midwest, EPA will limit air pollutants that blow across borders from neighboring states.

President Clinton initiated a new "full disclosure" standard for safe drinking water that will require water providers to report to customers the source of their household water and what contaminants were removed, so people can be sure they have clean, healthy tap water.

Using the Internet, the EPA continues to guarantee that every American has access to information about toxic chemicals released into the air and water in their communities. This is important information. Since the right-to-know program began ten years ago, toxic emissions have been reduced almost by half.

Nonetheless, forty percent of our nation's waters are still too polluted for fishing or swimming 25 years after the Clean Water Act. The Vice President's Clean Water Action Plan will speed the restoration of our precious waterways by protecting watersheds, preventing pollution runoff and fostering partnerships with state and local governments and watershed groups.

We accelerated efforts to revitalize communities, to help turn brownfields — abandoned, contaminated urban property — into greenfields. This clears the way for local redevelopment while protecting green space outside our cities.

The nation's 500th Superfund site — located in Philadelphia — was cleaned up in 1997. More than twice as many toxic waste cleanups were completed in the past five years than in the preceding 12. And the pace of these cleanups has improved at lower cost.

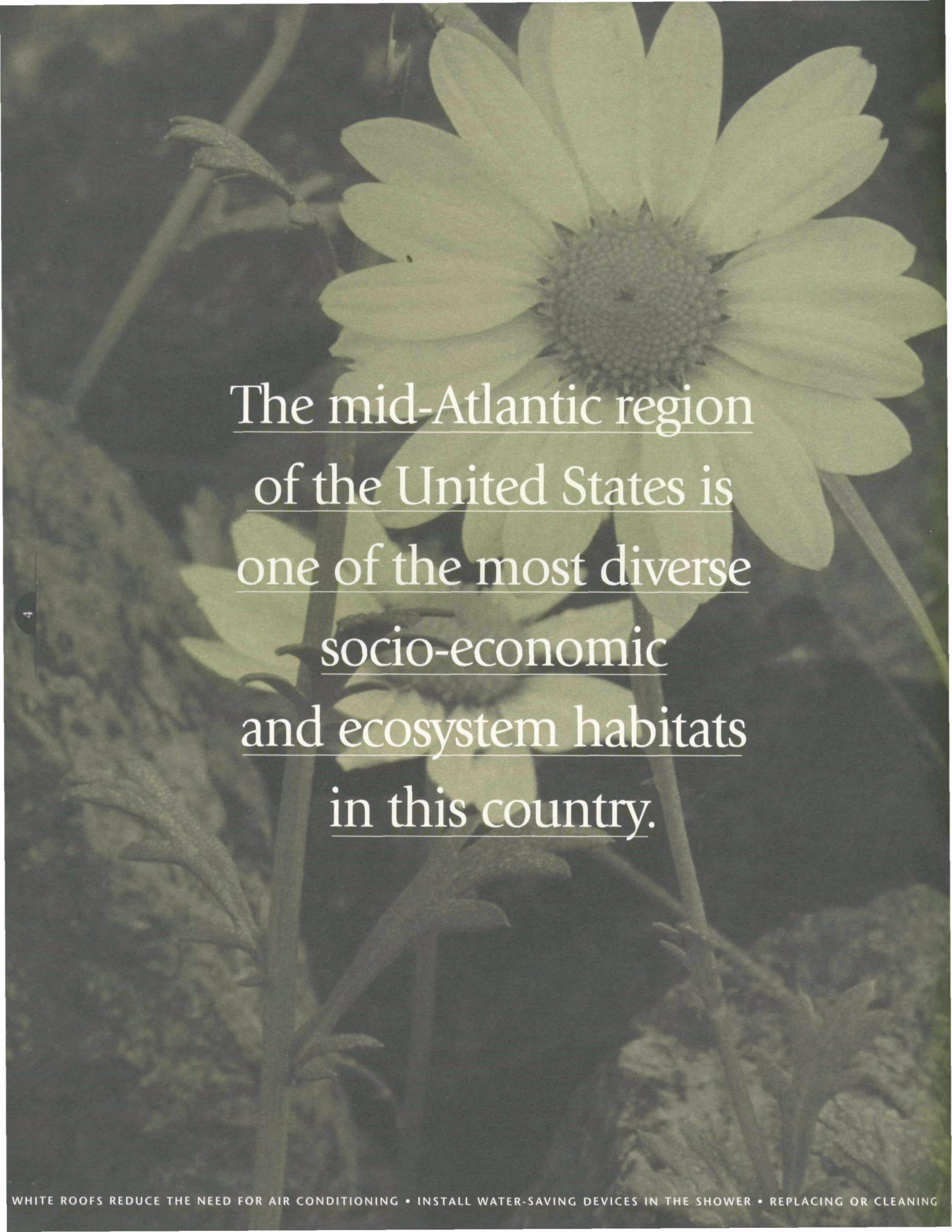
The EPA has sponsored successful programs to reduce the cost of doing business through use of green technology: Green Lights, Energy Star and Waste Wi$e.

Now President Clinton has proposed tax incentives to further reduce harmful greenhouse gases, increase energy efficiency, and develop a cleaner automobile that uses less fuel. Reducing emissions from burning fossil fuels will go a long way to curb pollution that causes global warming — the pre-eminent challenge that we must meet if we truly hope to sustain the quality of life on earth.

While a great deal has been accomplished, tremendous challenges lie before us. This report on our achievement in 1997 should serve to remind us of how much remains to be done in the years to come.

W. Michael McCabe

Regional Administrator



The mid-Atlantic region of the United States is one of the most diverse socio-economic and ecosystem habitats in this country.

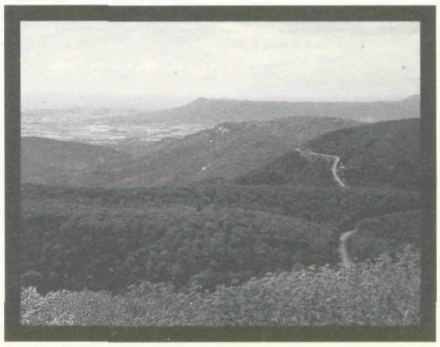
COLONIAL WILLIAMSBURG FOUNDATION

A carriage on Duke of Gloucester Street in historic Williamsburg, Virginia.

RICH IN HISTORY AND NATURAL RESOURCES, DIVERSE IN GEOGRAPHY, BUSINESS AND INDUSTRY

Its people represent 10 percent of the U.S. population and own 10 percent of all registered automobiles. Its business and industry account for more than 10 percent of the nation's gross national product. With sandy beaches, mountain forests, the Chesapeake Bay, industrial centers, farmlands, winter ski resorts, affluent suburban communities and major metropolitan cities, the mid-Atlantic states present unique environmental challenges. This expansive watershed extends from the Blue Ridge mountains of western Virginia and the mountains of southern New York to Delaware and West Virginia.

Residents in Delaware, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia are proud of the legacy their forefathers gave to this country. Native Americans lived in harmony with this land for thousands of years. The first settlers established a colony at Jamestown, Virginia in 1607. Later, nearby Williamsburg was chosen the capital of the Virginia colony. Philadelphia was where Thomas Jefferson authored the Declaration of Independence, and where Ben Franklin captured electricity and established the first hospital and postal systems in America. The "City of Brotherly Love" also was the scientific training center for the Lewis and Clark Expedition, that launched to the Pacific from the forks of the Ohio.



SHENANDOAH NATIONAL PARK

Shenandoah National Park, Virginia, looking west toward Massanutten from Loft Mountain.

Delaware became the first state. The region is home to the nation's second oldest institution of higher learning, The College of William & Mary, plus the U.S. Naval Academy and scores of prestigious colleges and universities.

Oil was first discovered in Titusville, Pennsylvania. The region's wealth of natural resources include coal, oil, natural gas, timber, fertile land for agriculture, and a myriad of waters that provide an abundance of seafood. The Chesapeake Bay is the most productive estuary in the world.

Today, many of our most venerable cities are faced with rebuilding an old and worn-out infrastructure and cleansing inner-city neighborhoods contaminated with lead-based paint, asbestos and other toxic hazards. Radon is prevalent throughout the region, and is found in more locations and at higher levels than in any other area of the U.S. As a result of global competition and a move for greater efficiency, aging steel, chemical, petroleum and other heavy industries abandoned plants, leaving behind vacant buildings and land scarred by hazardous materials.

Coal mining led to constant seepage of sulfuric acid into adjacent streams. Mining technology, called "valley fill," poses yet another threat by filling once pristine valleys

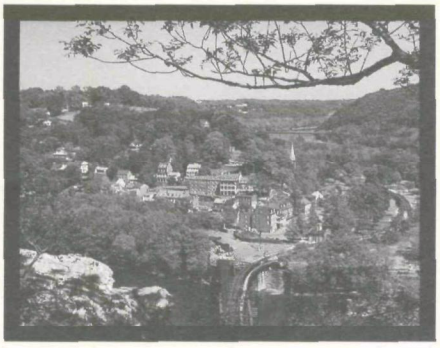
with coal refuse. Increased population growth and the demand for suburban living have produced urban sprawl. New recreational and resort communities have encroached on coastal wetlands, and eliminated some altogether. Water runoff and discharges from agriculture and livestock further imperil the region's ecology.

Transportation is another critical issue. Air currents transport pollutants from coal-burning industries and electric utility power plants in the Ohio River Valley into states downwind, dumping acid rainfall on the mid-Atlantic states. Heavy automobile traffic in cities and on Interstate 95, the major north-south expressway along the East Coast from Florida to Maine, generates significant amounts of ozone smog. These have combined to give the region the highest acid rainfall in North America.

Plastics thrown into Philadelphia-area storm sewers can travel through streams and rivers and into the Atlantic Ocean, choking sea turtles and dolphins.

There is no single or simple solution.

STEVE SHAULTA, JR., WEST VIRGINIA DEPARTMENT OF TOURISM & PARKS



Harpers Ferry National Historic Park, Jefferson County, West Virginia

PRESERVING THE LEGACY

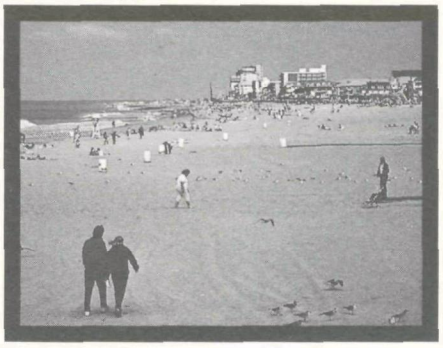
The region has a variety of environments. The multi-state Coastal Plain is characterized by extensive shorelines, wetlands and slowly meandering streams. These serve as an important habitat for many species of fish, plus crabs, oysters and other shellfish, which have, in turn, provided people with food and jobs.

The Coastal Plain gives way to the gently rolling foothills of the Appalachian Mountains, known as the Piedmont Plateau, with its fertile soils and proximity to abundant sources of fresh water.

This eco-region forms the central spine of the Appalachian Mountain Range, which supports farming in the valleys and wildlife on the ridges. The Allegheny Plateau has extensive and valuable mineral and forest resources, including coal, petroleum and timber industries. Human pressures on these natural resources are intense.

In recent years, modern technology has identified many new hazardous pollutants. Scientists also have learned that protecting ecosystems involves controlling pollutants that travel great distances in the air, water and underground. Runoff from central and eastern Pennsylvania farms flows into the Susquehanna River, and eventually into the Chesapeake Bay.

The solution to the environmental problems of the mid-Atlantic states requires a long-term investment. People have polluted the region's environment for more than 300 years. But only in the 1960s did society become aware of the damage being done to the planet. Not until the publication of Rachel Carson's *Silent Spring* and the

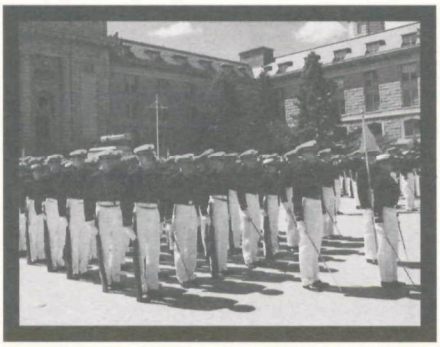


OCEAN CITY DEPARTMENT OF TOURISM

The beach at Ocean City, Maryland.

WATER-EFFICIENT SHOWER HEADS USE HALF AS MUCH HOT WATER, EACH YEAR REDUCING CARBON DIOXIDE EMISSIONS FROM BETWEEN 300

U.S. NAVAL ACADEMY PUBLIC AFFAIRS OFFICE



Midshipmen pass in review at the Naval Academy in Annapolis, Maryland.

celebration of the first Earth Day on April 22, 1970 was there widespread public concern about protecting the environment.

Since it was created in December 1970, the U.S. Environmental Protection Agency has addressed many of the most visible pollution problems. And every year, new problems are identified. Ozone, global warming, PCBs and indoor radon are today's equivalents of the smog and DDT of the 1960s. There are problems today that no one was aware of on the first Earth Day.

Corrective action now may take decades to show results, especially where pollutants travel through underground water systems. Eliminating pollutants from farming may take years before contaminated underground water runs clean and clear.

The science of environmental management is becoming increasingly aware of an interrelationship between all things — especially the interaction of people and other living things with the physical features of the varied ecosystems. The exact cause-and-effect relationship of many environmental problems is not always fully understood. Environmental information is gathered and continuously assessed by experts in the region, often working in partnership with other federal, state and local government agencies, to monitor water and air quality, and the condition of the habitats, flora and fauna; to analyze trends; and to determine a strategic management approach to solving each problem.

STEPHEN C. DELANEY

Vice President Al Gore meets with children at Baltimore Harbor.

Environmental protection and pollution control agencies in each state — in partnership with the EPA — are responsible for regulating more than 21,000 air pollution sources, 12,000 water pollution sources and 425 hazardous waste treatment, storage and disposal facilities. Additionally, the region and states are responsible for the active investigation of more than 1,500 potential hazardous waste dump sites and the cleanup of 165 sites that are included or proposed for the Superfund National Priorities List.

USING INDICATORS TO MEASURE RESULTS AND SET PRIORITIES

People living along the Delaware River have seen the success of the Clean Water Act. And in many industrial cities throughout the region, residents breathe cleaner air. Environmental indicators are scientific measurements comparing today's environment with where we were 10, 15 or 25 years ago.

In 1992 and 1993, the EPA region's senior management began to develop environmental indicators and collect and use scientific data to establish priorities and characterize the range of environmental and human health risks. Indicators can tell scientists if progress is being made and can project future trends.

The first of seven specific "state of the environment" reports is scheduled for public distribution in early 1998. A report on the region's estuaries where fresh water meets salt has special geographic emphasis for the Delaware Bay, the Chesapeake Bay, the Delmarva coastal bays, and large rivers that flow into the bays. Estuaries in the mid-Atlantic states provide valuable habitat for many birds, mammals, fish and other aquatic life, and are important recreational assets.

The estuary report focuses on the current condition of the resources, plus water quality, sediment, contamination, and the hows and whys of habitat change. It examines why the oyster harvest has declined from 133 million pounds in 1880 to today's annual catch of about one million pounds. And the report evaluates threats to the world's largest population of blue crabs, in the Chesapeake Bay.

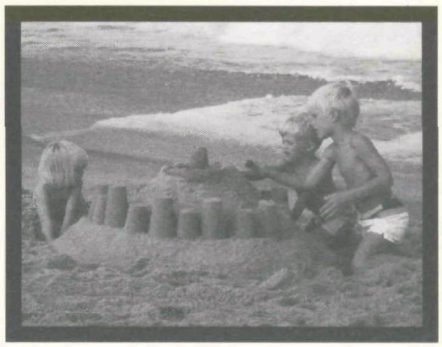
Other subjects planned for subsequent regional "state-of" reports include the surface waters of the mid-Atlantic highlands, and the region's forests, groundwater, landscape, wetlands, health risks in the District of Columbia, and a profile of agriculture in Maryland and Delaware. Scheduled for publication in mid-1998 is the triennial report on the state of the Chesapeake Bay.

In collaboration with national program offices, EPA Region III administers 28 federal environmental laws. Data is collected by regional staff; federal, state and local agencies; industry; and volunteer groups. There are 350 federal monitoring programs and more than 450 state and local government agencies, environmental groups, and private and academic programs involved in collecting data in the mid-Atlantic states.

As environmental managers and state and local officials become more familiar with new environmental data, including satellite imaging, for the first time, the true mosaic of land use and vegetation is revealed, providing the agency with a better understanding of human influences on natural resources. High-speed computers will model programs and assess risks to prevent undesirable impacts on our resources. The information will be available to all interested parties, in hard copy as well as on the Internet.

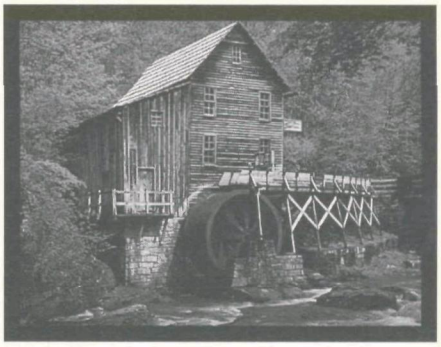
STEPHEN C. DELANEY

Father and son enjoy water sports on the Chesapeake Bay.



REHOBOTH BEACH - DEWEY BEACH CHAMBER OF COMMERCE

Children build sand castle on beach at Rehoboth Beach, Delaware.

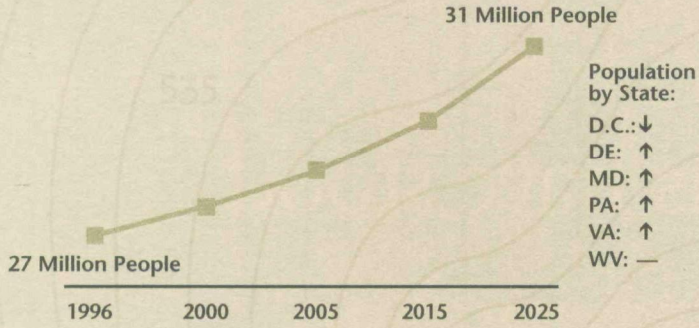


DAVID FATTALEH, WEST VIRGINIA DEPARTMENT OF TOURISM & PARKS

Glade Creek Grist Mill in Babcock State Park, Fayette County, West Virginia.

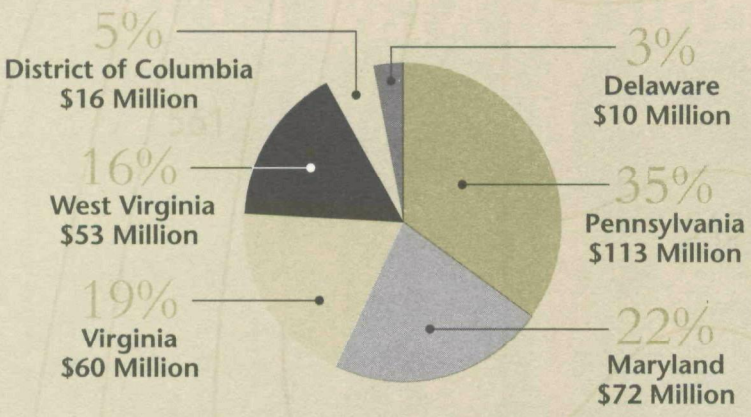
THE AVERAGE GAS-POWERED LAWN MOWER EMITS MORE THAN 11 TIMES THE AMOUNT OF HYDROCARBONS PER HOUR THAN THE AVERAGE CAR

Region III's Population is Expected to Increase by 15% Over the Next 30 Years



Region III's Number of Vehicles has Increased by 82% Since 1970

1997 EPA Grants to Region III States



Fiscal Year 1997 Awards as of September 30, 1997

• ONLY 20 PERCENT OF CARBON EMISSIONS COME FROM THE TRANSPORTATION SECTOR — 80 PERCENT COME FROM THE STATIC USES OF ENERGY

"Americans have stood as one in saying "no" to things like dirty water, and "yes" to giving our children an environment as unspoiled as their hopes and dreams."

—President Clinton, May 1995

EVERY POUND OF RECYCLED GARBAGE SAVES TWO POUNDS OF CARBON DIOXIDE EMISSIONS • IF GREENHOUSE GASES ARE

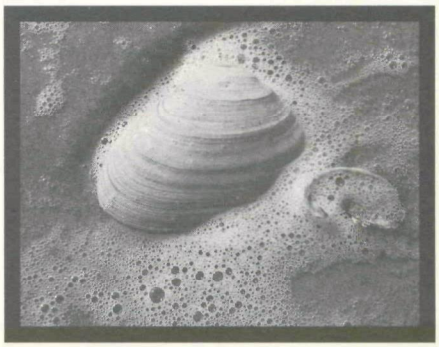
RICHARD TOMLINSON
GOVERNOR'S PRESS OFFICE

EPA Administrator Carol M. Browner and Maryland Governor Parris N. Glendening break ground for the planting of a riparian forest buffer on the shores of the Severn River in Annapolis.

THE CHESAPEAKE BAY

The Chesapeake Bay is the largest, most environmentally significant estuary in North America. Its expansive and dynamic system of water and living creatures also is one of the most carefully monitored bodies of water in the world. The fresh waters and the salt waters of the bay are constantly being affected by inflowing rivers, the Atlantic Ocean, the shoreline and air, all of which change with the tides and seasons. About 40 percent of the land in the bay's 64,000-square-mile watershed no longer is in its natural state, and wetlands are being lost at a rate of eight acres per day. The bay is extremely productive and it is shallow, averaging only 21 feet in depth. All this presents formidable challenges to understanding and managing the Chesapeake.

The Chesapeake Bay Program initiated a unique partnership between the region and federal, state and local governments. Founded in 1983, it is considered a national and international model for estuarine restoration and protection programs. Since its inception, the program's highest priority has been the restoration of the bay's living resources — its finfish, shellfish, bay grasses, waterfowl and other aquatic life and wildlife.



STEPHEN C. DELANEY

The nutrients nitrogen and phosphorus are the bay's most significant pollution threat. Many areas of the bay have cloudy water from an overgrowth of algae fueled by nutrients, or from too much sediment in the water. Many of these nutrients run off from agricultural land that contains animal waste. Algae block sunlight needed to grow aquatic grasses, an important habitat for fish and shellfish.

Urban, suburban and agricultural lands all leach more pollutants into the bay than natural forests or wetlands. While agricultural runoff and municipal point sources are the two largest contributors of nutrients, virtually all individuals and many industries in the bay's watershed contribute nutrient pollution to the bay. The two largest rivers that drain the watershed, the Susquehanna and Potomac, dump increasing volumes of wastewater into the bay from a growing population. However, through modern wastewater treatment and bans of phosphorus detergents, point sources of phosphorus have decreased 70 percent since the 1970s, in spite of a 40 percent increase in flows of wastewater. Recent controls are reducing levels of nitrogen from agriculture and point sources such as industries and municipal sewage treatment plants.

The Blue Plains sewage treatment plant in Washington, D.C. is one of the nation's largest wastewater facilities. A new pilot project to remove nitrogen is working better than originally anticipated, currently removing three million pounds per year.

To filter out nutrients that might reach the bay, the Chesapeake Bay Program adopted the Riparian Forest Buffer Initiative, which preserves existing forest buffers and commits to planting new trees on 2,010 miles of stream and shoreline by 2010.

Acid rain formed by smokestack emissions and car exhaust accounts for one-fifth of the total nitrogen that reaches the bay's waters. The "airshed" from which pollutants contribute to acid rain is 349,000 square miles, or more than five times larger than the bay's watershed.

The bay is one of the most carefully monitored eco-systems in the world. Data used to analyze water quality have been taken at more than 130 sites throughout the bay and its watershed since 1984. Sophisticated computer models determine the nitrogen pollution in the bay from the air. These monitoring data add up to some important trends.

Scientists are investigating a toxic microorganism, *pfiesteria piscicida*, which killed tens of thousands of fish in the Pocomoke River and several other bay tributaries on the lower Eastern Shore of Maryland in 1997. Fish suffered from lesions, and the single-cell organism was linked to human health problems such as skin rashes and memory loss.

One concern is the tremendous growth of the poultry industry on the Delmarva Peninsula, the eastern shore of the bay. Some 623 million chickens each year produce 3.2 billion pounds of raw waste containing 13.8 million pounds of phosphorus and 48.2 million pounds of nitrogen. That is as much nitrogen waste as a city of 490,000 people produces in a year.

STEPHEN C. DELANEY

In June 1997, a plan was adopted to ensure the viability of the blue crab in the Chesapeake Bay. The plan outlines future actions to control overfishing by both Maryland and Virginia, and clearly defines goals to restore blue crab habitat. The commercial value of the annual crab harvest in the bay is $60 million.

The region's management has been meeting with industry leaders to explore the possibility that poultry waste contributing nutrients to the bay may be tied to *pfiesteria*. The poultry industry has offered $1 million to research the situation.

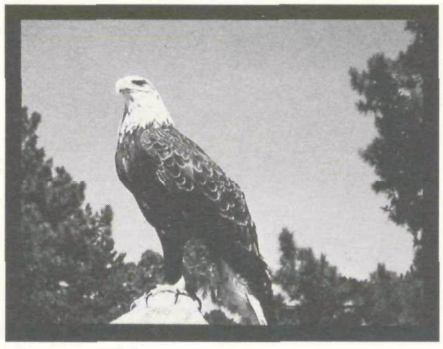
The Chesapeake Bay Program has a commitment to reduce the flow of two nutrients — nitrogen and phosphorus — 40 percent by the year 2000. This means greater protection for wetlands and expanded support for community-based watershed restoration efforts. The measure of success will be determined by increased water quality that allows fish, crabs, waterfowl, bay grasses and other living resources to return to abundance.

CHESAPEAKE BAY PROGRAM

Fish Blockages Removed — In 1993, a goal was set to construct fish passages at dams and other blockages to open over 731 miles of river by 1998, and nearly twice that by 2003. By September 1997, 330 miles of historic spawning habitat were reopened to migratory fish and an additional 62 miles to resident fish. In 1998, when a vertical-slot fish passage will be operational at the Boshers Dam in Richmond, Virginia, more than 300 miles of the James River and other tributaries will reopen, restoring the annual spring spawning runs that have been obstructed since 1803.

RESTORING RIVERS, LAKES AND STREAMS

In addition to the Chesapeake Bay and some of the world's most important natural water resources, the region is faced with continuing challenges that include acid pollution, safe drinking water and making its rivers, lakes and streams safe and healthy for people and all living things. This year marked the 25th anniversary of the Clean Water Act, which has been responsible for significant improvements since it became law in 1972.



U.S. FISH & WILDLIFE SERVICE

In 1977, only 72 active American bald eagle nests could be found in Maryland and Virginia, and none in the Pennsylvania portion of the bay's watershed. With the 1972 ban on DDT, as well as habitat improvements in the region, bald eagles have made a comeback. In 1996, there were more than 400 nesting pairs in these three areas.

THE HUMAN RACE USES NEARLY ONE-HALF OF THE EARTH'S AVAILABLE FRESH WATER, AND 40 PERCENT OF THE WORLD'S POPULATION

NEW JERSEY DIV. OF FISH, GAME & WILDLIFE

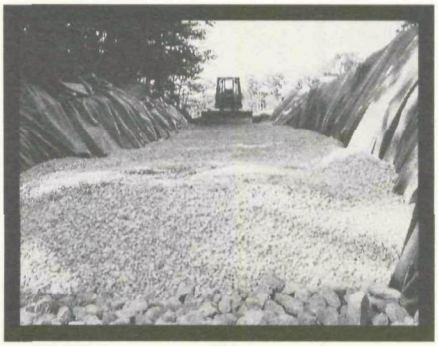
Nearly 90 percent of all striped bass, or rockfish, on the Atlantic coast spawn in the Chesapeake Bay and its tributaries. Overfishing and pollution severely threatened the striped bass population in the 1980s. Federal legislation coupled with cooperative management have led to improved water quality, resulting in a resurgence of striped bass. In 1996, a record number of juvenile fish were counted, and 1997 saw a record count of the "spawning stock."

Over the years, millions of dollars in research and water treatment have been spent on acid mine drainage, yet more than 80 percent of the 4,500 miles of streams in the coal-mining areas of Pennsylvania, West Virginia, Maryland and Virginia are still polluted. Mining exposes air and water to iron-sulfide minerals, forming solvent acids that turn streams reddish-orange and kill fish and other aquatic life. Dead streams in turn eliminate recreational opportunities and tourism revenues.

Another form of acid pollution comes from the atmosphere. Acid rain is deposited on both land and water. While polluting emissions have dropped significantly as a result of the Clean Air Act, the mid-Atlantic region continues to be adversely impacted by acid rain.

To determine the degree of pollution in streams and rivers, scientists look at two sources: point source pollution from factories and sewage plants and non-point sources, such as farms, pastures and city streets.

In the mid-Atlantic region alone, EPA has overseen $6 billion in direct federal assistance to local governments for sewage treatment. In 1987, Congress created a new funding mechanism, the Clean Water State Revolving Fund, through which federal grants to states capitalize low-interest loans for publicly owned treatment plants, control of storm water and even polluted runoff. In 1997, Region III grants totaled more than $110 million for these purposes alone, bringing the regional total to $1.5 billion since 1988.



BERNIE SARNOWSKI

Treating acid mine drainage in West Virginia with limestone to reduce harmful acidity.

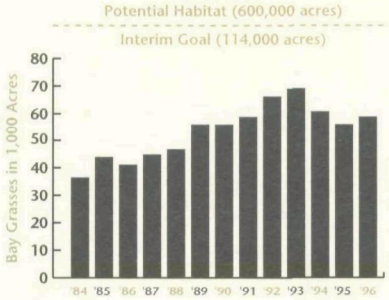
The states have the responsibility for issuing permits and monitoring surface water discharges from specific sources under the National Pollutant Discharge Elimination System. The EPA tracks the number of major facilities that have compliance problems and coordinates with state partners how best to address the problem by means of education, training and technical assistance.

The Pennsylvania Department of Environmental Protection identified more than 58 stream miles in Lancaster and Chester counties degraded by agricultural pollution.

Water quality standards and discharge limits for various pollutants are set for specific uses of water, whether for a trout stream, commercial fishing, swimming, boating, drinking water or commercial navigation.

Bay Grasses Recovering

Acreage has increased about 70% since the 1984 low point.



Bay grasses, or submerged aquatic vegetation, are a critical habitat for many bay species, including crabs and finfish. Grasses also provide food for waterfowl and help filter out pollutants that degrade the bay's water quality. By 1997, Chesapeake Bay grasses had been restored to 63,400 acres of bay bottom, a 70 % increase over the historic low in 1984.

CLEANING A RIVER

Hundreds of streams across 13,000 square miles feed the 331-mile -long Delaware River and bay. Within this basin are major portions of four states and more than 800 municipalities. Factories, refineries and sewage plants dumped poisons into the once beautiful Delaware River, praised by William Penn three centuries ago as a living resource. By the 1960s, the Delaware River below Philadelphia for 100 miles to the bay was dying because

it contained little or no oxygen. The Delaware River had become a death trap for migratory fish, and unfit for boating, swimming and other recreational activities.

The Clean Water Act of 1972 breathed new life into the Delaware, one of the few undammed major American rivers. For the first time, money was available for grants, studies, monitoring, for controlling waste discharge permits and for enforcement powers to ensure compliance. Millions of dollars were spent to upgrade wastewater treatment plants. Factories and refineries incorporated environmental upgrades.

The results are evident today. When the shad make their annual spawning run from the sea up the Delaware, the river is filled with fisherman. Philadelphia's waterfront prospers with nightclubs, restaurants, a proposed hotel and entertainment complex, river tours, recreational boating, and ferry rides to the New Jersey State Aquarium.

The health of the river is monitored each year during the week of Earth Day. More than 70 organizations, schools and hundreds of individuals come together for basin-wide water quality monitoring. The Delaware River today is getting healthier and cleaner every day.

DELAWARE ESTUARY PROGRAM

Left to right: Governors Tom Ridge (R-Pennsylvania), Christine Whitman (R-New Jersey) and Thomas R. Carper (D-Delaware) toast W. Michael McCabe and Jeanne M. Fox, EPA Regional Administrators for Regions III and II, respectively, with glasses of water from the Delaware River, to begin the implementation phase of the Delaware Estuary Program. EPA contributed $6.4 million to the development of a plan for the program, which is a cooperative effort between the three states and EPA. Program support includes monitoring, information management, outreach and education.

SAFE DRINKING WATER

In the mid-Atlantic states, 20,000 public water systems provide drinking water to 25 million consumers every day. While 40 large systems serve half the population with safe drinking water, many small public water systems consistently are unable to comply with all monitoring requirements, and a few violate health and safety standards.

Amendments in 1996 to the Safe Drinking Water Act emphasize assistance to small public water systems for preventive measures to assure safe operations and maintenance, and ways to identify and reduce potential contamination of drinking water sources. The act also mandates quicker notification of consumers when water is contaminated and requires water suppliers once a year to tell customers what's in their drinking water and where it came from.

These efforts are supported by a drinking water state revolving fund to support low-interest loans for public water systems and state and local governments. In 1997, the first grants to Region III states and the District of Columbia were made under the new funding program, which totals more than $80 million.

Because of continuing water problems in Washington, D.C., the EPA obtained a consent order with the district that provided for improved operation and maintenance of the city's water distribution system and a long-term financial plan to pay for improvements. In 1997, because of the improved maintenance that EPA required, the quality of the drinking water in the nation's capital significantly improved, and met all federal standards throughout the year.

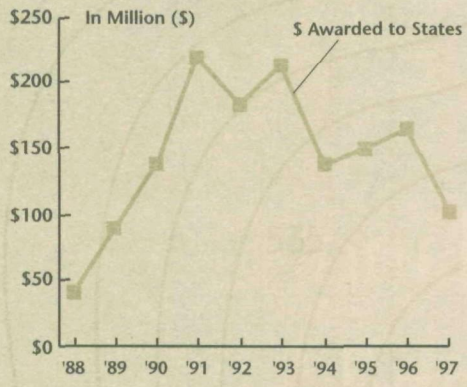
The region continued working with states and local authorities to promote and implement groundwater protection. More than 600 public water systems using groundwater have implemented wellhead protection programs to safeguard their water supplies. In 1997, the regional headquarters designated a large portion of the eastern shore of Virginia as a sole source aquifer and reviewed a petition from citizens in Montgomery County, Maryland to better protect their source of drinking water.

HENRY BRUBAKER

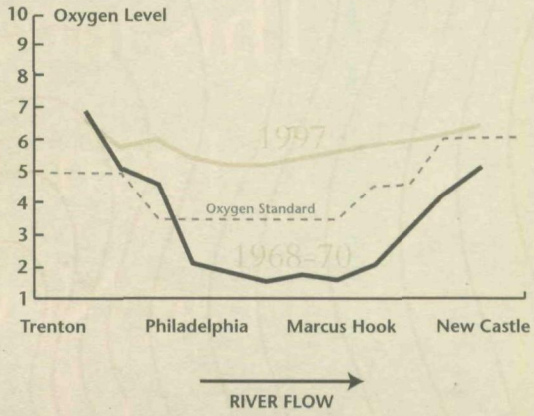
EPA program managers from headquarters and all 10 regional offices hear plans to remove a dam from Lititz Run in Lancaster County, Pennsylvania, to create a fish passage.

ENVIRONMENTALLY FRIENDLY BUSINESS CARDS CAN BY MADE USING VEGETABLE-BASED INKS AND STOCK MADE FROM RECYCLED BLUE

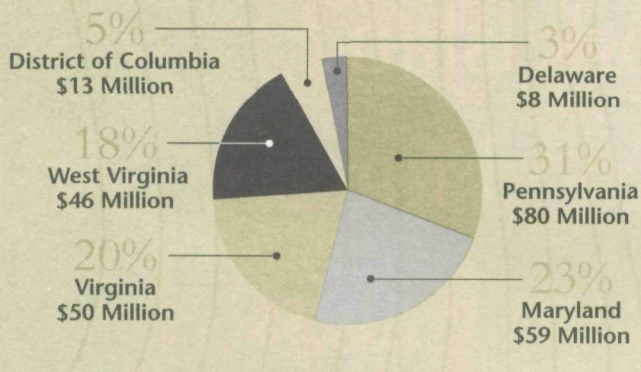
New Sewage Treatment Plants Caused Improved Water Quality.



Reduced Pollution Improved The Delaware River.

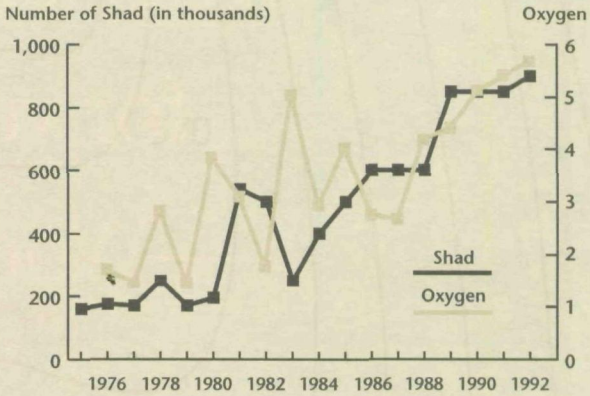


Water Grants to Region III States

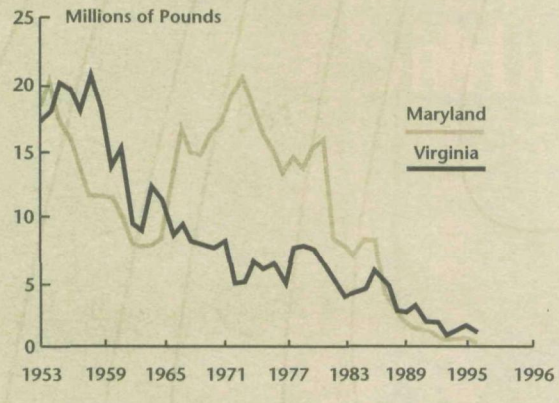


Fiscal Year 1997 Awards as of September 30, 1997

The Improved Delaware River Produced Increased Numbers of Shad.



Declining Oyster Harvests in Maryland & Delaware



This land is your land,
This land is my land,
From California
to the New York island,
From the redwood forest
to the Gulf Stream waters,
This land was made
for you and me.
—Woodie Guthrie

THE GLOBAL SEA LEVEL HAS RISEN BY UP TO TEN INCHES IN THE LAST 100 YEARS, AND IS EXPECTED TO INCREASE SIX TO 38

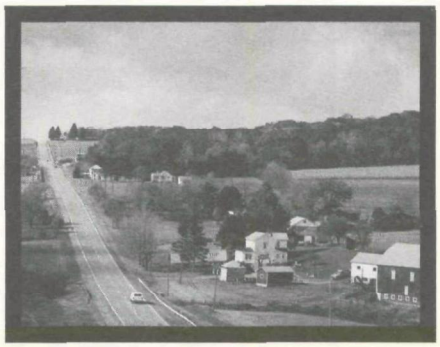
STEVEN M. FALK, PHILADELPHIA DAILY NEWS

EPA Administrator Carol M. Browner gives Philadelphia Mayor Edward Rendell a tour of the site of the former Publicker Industries in Philadelphia, where construction was completed in December on the nation's 500th Superfund site.

RECORD SUPERFUND SITE CLEANUP

The mid-Atlantic region continues to lead the nation in action and innovation. In 1997, EPA celebrated the country's 500th Superfund site cleanup. The region has 183 sites on the National Priorities List. Three out of five cleanup activities now are completed or underway. The book was closed on six of the most contaminated Superfund sites in the country — a national record — and the region decided how to proceed with the cleanup of 19 other sites, to eliminate all immediate threats to human health and the environment.

Five of the six national priority sites were in Pennsylvania. Bruin Lagoon, 45 miles north of Pittsburgh, and Hranica Landfill, which at one time contained 19,000 hazardous waste-filled drums stacked haphazardly around the site, were simultaneously deleted from the list at a special event in September in Butler County. The others were Ambler Asbestos Piles in Montgomery County; AMP, Inc., a York County plastics manufacturer; Middletown Air Field in Dauphin County; and Sealand Limited, Inc., a former waste oil recycler in New Castle County, Delaware.



STEPHEN C. DELANEY

Agriculture runoff creates a problem, adding nutrients to the Chesapeake Bay.

The region, which is responsible for more than 12 percent of the total national sites, completed cleanup construction at an additional seven locations — four in Pennsylvania, two in Virginia and one in Delaware.

An August event in New Castle County at Delaware Sand and Gravel, a national model of Superfund success, marked the program's 445th completion. This 27-acre site accepted industrial and chemical wastes between 1968 and 1976, and was a major source of contaminated water and soil. Innovative technology, called bioremediation, was used after the removal of 13,000 drums and more than 80 rail cars of PCB-contaminated soil. The cooperative partnership between EPA and the Delaware state government and responsible parties facilitated the cleanup and saved millions of dollars.

The Dixie Caverns Landfill outside of Roanoke, Virginia, was the nation's 460th Superfund site completion. Others included U.S. Titanium in Nelson County, Virginia, and three in Pennsylvania: Brodhead Creek in Monroe County, Croydon TCE in Bucks County, and Delta Quarries/Stotler Landfill in Blair County.

In December, construction was completed on the nation's 500th Superfund site, Publicker Industries in Philadelphia, where liquor was stored and industrial alcohol distilled. The 40-acre site, located in the floodplain along the Delaware River, now is being used for recreation and harbors peregrine falcon nests. Most of the $20 million cleanup cost was recovered through litigation. The site had 440 large tanks, storage

drums, laboratories and other buildings, a power plant and several hundred miles of pipelines above and below ground. EPA removed more than two million gallons of hazardous materials, including toxic and flammable gases, asbestos and PCBs.

The site, which Publicker used for nearly 75 years, will be put back into productive use as a multi-purpose shipping terminal, part of the expansion of the Port of Philadelphia. The project is expected to create hundreds of new jobs.

BOBBI ROBINSON

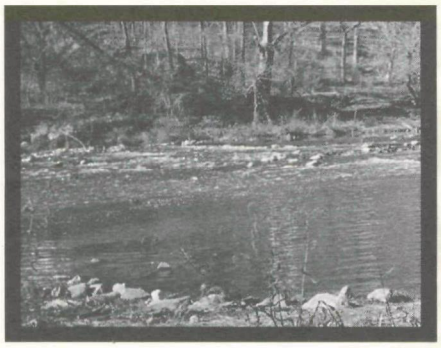
Sulzberger Middle School children and EPA employees actively clean up their schoolyard on Earth Day.

CREATIVE CLEANUP LIABILITY STRATEGIES

To encourage the sale and redevelopment of contaminated land, the agency protects buyers from lawsuits under certain conditions.

The region leads the nation in having parties responsible for contamination pay long-term cleanup costs. Nearly 80 percent of the Superfund cleanups in the region are financed or performed by those responsible, saving taxpayers an estimated $1.7 billion.

HENRY BRUBAKER



The Conestoga River at Rock Hill, Pennsylvania.

The agency also is finding creative ways to resolve liability for small waste generators who are drawn into litigation by large toxic waste producers. A national landmark settlement was reached with 22 communities who were small waste contributors at the Moyer Landfill in Montgomery County, Pennsylvania. This marks the first case in the nation where local governments who contributed household-type garbage with small amounts of hazardous chemicals — such as paint thinner and bleach — will help restore a site and avoid complicated litigation.

The Keystone Sanitation Landfill outside Gettysburg, Pennsylvania is a Superfund site that gained national attention on CBS's *60 Minutes*, in *The Wall Street Journal* and other news media because of the involvement of more than 700 third and fourth-party defendants. The parties were not sued by EPA, but were brought into the case by the 11 parties who originally were sued for the cleanup costs. Of $21.5 million estimated for the total cleanup, EPA removed 376 defendants from the litigation for a $4.25 million settlement. Many of the parties were small businesses like pizza and donut shops, restaurants, and apartment owners who could not afford lengthy litigation. Most sent only typical household-type trash with small amounts of hazardous materials to the site. The liability of another 187 third and fourth-party defendants was resolved with nominal one-dollar settlements.

The EPA is working with Congress to amend the Superfund law to better protect small defendants from runaway lawsuits.

STEPHEN C. DELANEY

Children learn recycling early by recycling aluminum cans.

Agreements signed by Delaware and Maryland created two of the nation's first voluntary cleanup programs that allow states that meet federal guidelines to clean up local sites while allowing EPA flexibility to respond to emergencies and catastrophic events.

PROMOTING REDEVELOPMENT

Vacant, abandoned and contaminated former industrial properties are being cleaned up and put to new uses under a program called Brownfields. Of 34 sites in the U.S., three are in the mid-Atlantic states. A three-square-mile site not far from the front lawn of William Penn's historic country home in Bucks County is overshadowed by steel-industry smokestacks where downsizing in the past two decades has displaced thousands of workers in the communities of Bristol and Morrisville. The area maintains the county's highest rate of unemployment and largest percentage of people living in poverty. Abandoned and under-used buildings clutter the landscape.

The goal of a site in Wilmington, Delaware is to make the city a more competitive supplier of services for businesses, industries, residents and tourists. Contaminated industrial properties have reduced the inventory of developable acreage by 24 percent. An EPA grant will be spent on a cleanup and redevelopment planning database, coordination of community redevelopment, and efforts to obtain $1 million in redevelopment funding.

CHESAPEAKE BAY PROGRAM

Contour plowing prevents loss of topsoil and erosion.

Closures and downsizing of heavy manufacturing operations resulted in significant job losses and created many vacant and under-used industrial properties in the southeast corridor of Baltimore County, Maryland. Suspected environmental contamination has impeded reinvestment. The county will receive funding to identify and assess potential Brownfield sites and encourage prospective property owners to participate in voluntary cleanup efforts.

RESPONSE TO EMERGENCIES

EPA responded more than 40 times to emergency removal actions throughout the region. The responses ranged from fencing a DDT-contaminated field in Hagerstown, Maryland, where children were riding bicycles, to investigating dangerous levels of radioactivity in scrap metal at a Berks County, Pennsylvania recycling center.

One of the most famous sites that needed swift action was Valley Forge National Park, where General George Washington camped with Continental Army troops during

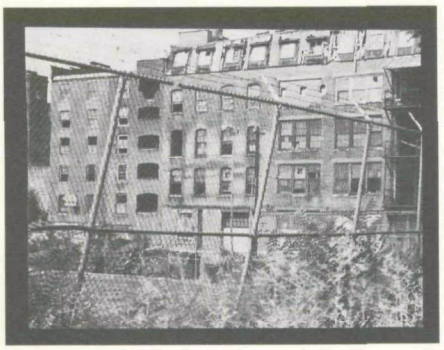
the Revolutionary War. Prior to Memorial Day weekend, asbestos that had been buried 70 years earlier surfaced at more than 40 park locations due to heavy rains. Fencing kept visitors away from hazardous areas, and wetting down the asbestos prevented it from becoming airborne. A semi-permanent cover will be placed over the asbestos.

Helping communities prepare for chemical, biological or nuclear emergencies is an increasingly important role for EPA. The ninth annual Chemical Emergency Preparedness and Prevention Conference held in Pittsburgh in December attracted an international audience of nearly 1,000 for the four-day event. Highlights included a ballroom-sized diorama that simulated a domestic terrorism incident, and displays and tours of C-130 aircraft and aerial spray equipment used in emergencies, as well as a hands-on emergency response demonstration for children.

From on the scene to in the courtroom, there was a major civil settlement in the Superfund's emergency removal enforcement section. After more than 100 illegal oil spills from corroded pipelines in Western Pennsylvania and West Virginia — the largest at 10,500 gallons — EPA won an $867,000 settlement against Pennzoil Products and its Eureka Pipeline Company. It was the largest Oil Pollution Act settlement in the region's history.

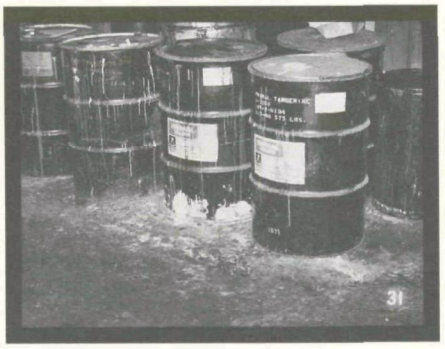
FROM SUPERFUND TO SUPER PARK

Earth Day 1997 was a most appropriate day to dedicate Liberty Land, a two-acre community park in the Northern Liberties section of Philadelphia. The site, which became the area's only greenspace, formerly housed tanneries, breweries and factories employing thousands of workers. An investment group that had purchased the site donated the property to a community association.



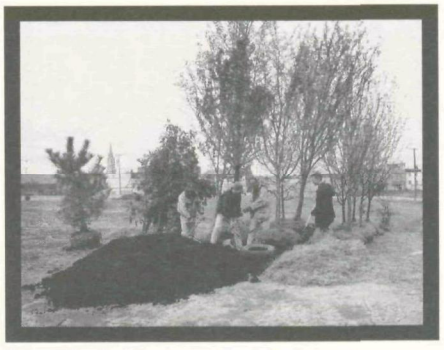
TAT REGION III

Before: The American Street Tannery building was abandoned and decrepit. In the Northern Liberties section of Philadelphia, the area was cordoned off to prevent unauthorized access and potential injury.



JEFF LIEBERMAN

During: Leaking barrels found inside the American Street Tannery were suspected of containing toxic dye. This became the Northern Liberties Superfund site.

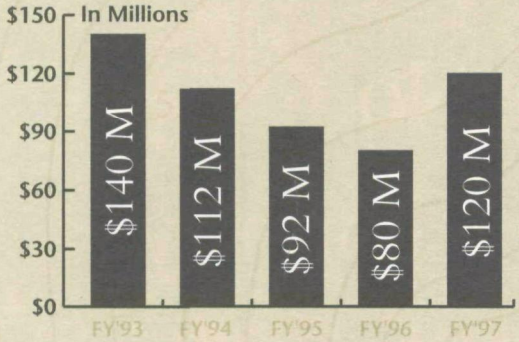


MICHAEL WIRTZ

After: The brownfields site assesment led to an "all clear." Liberty land went from being a Superfund site to a "super park."

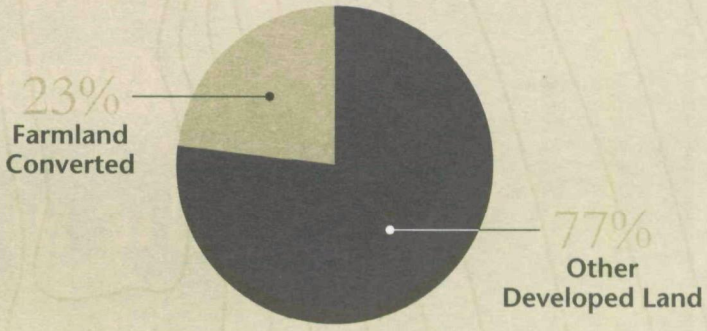
Funds Invested in Superfund Cleanups in Region III

The funds include oversight of private-party cleanups to ensure compliance with federal standards.



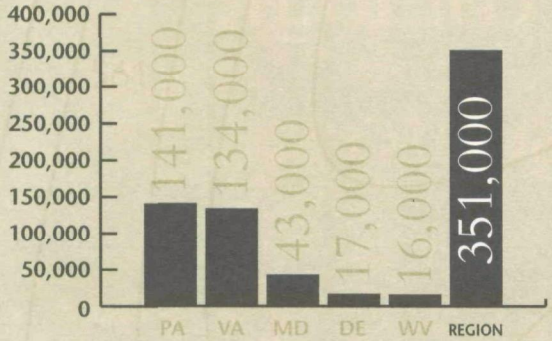
Land Used for Development

23% of the Region's Farmland Has Been Converted to Urban Land Since 1982.



Turning Farmland into Pavement

Since 1982, 351,000 acres of farmland have been developed.



MONTHS • AN ESTIMATED TWO TO THREE BILLION TIRES ARE STOCKPILED IN THE U.S. THAT'S ABOUT 7 TO 11 TIRES PER PERSON

The mid-Atlantic region of the U.S. and the Northeast are two areas of the country facing severe health and environmental effects of ozone pollution. Ozone smog forms in the air on hot, sunny days, when emissions from automobiles and utility power plants combine with other sources.

STEPHEN C. DELANEY

More than 85% of EPA Region III's Philadelphia employees either take public transit or walk to work.

CLEANER AIR

Ozone smog forms in the air on hot, sunny days, when emissions from automobiles and power plants combine. High amounts of ozone smog can cause shortness of breath, congestion, chest pain, and asthma attacks.

Health experts warn that some damage to the lungs from repeated exposure to ozone smog can be permanent. People who spend time outdoors in the summer, especially children, are more at risk. Besides causing health problems, ozone smog hurts agricultural crop production by impairing the ability of plants to produce and store food, making them more susceptible to disease, insects, pollution and harsh weather.

In July, the EPA established new, more stringent national health standards to better protect millions of Americans from two types of air pollution — ozone smog and particulate matter.

Particulate matter is also called soot. High amounts of particulate matter create a haze which reduces visibility. Windblown dust, crushing and grinding operations from cement manufacturing, and vehicles driving on unpaved roads generate "coarse" particles in the air. "Fine" particles typically come from motor vehicles, factories and power plants, residential fireplaces and other sources. Studies have revealed increased absences from school and work and more emergency room visits on days when particulates were high.

With EPA's new health standards for ozone smog and particulate matter, nearly 125 million more Americans, including 35 million children, will benefit from cleaner, healthier air.

RALPH SPAGNOLO

EPA's Green Communities assistance kit provides a tool to help communities plan for the future they envision. http:www.epa.gov/region03/greenkit

A REGIONAL APPROACH

A two-year study by the Ozone Transport Assessment Group, an organization of 37 Eastern states and the District of Columbia in partnership with EPA, found that ozone pollution travels hundreds of miles from its originating sources to reduce air quality downwind. EPA has proposed a regional strategy to reduce nitrogen oxides, a primary smog-forming pollutant, by 35 percent during the next 10 years across the entire Eastern region.

Based on the ozone transport study, the agency identified 22 states that significantly contribute to smog problems in other states. EPA called on these states to reduce emissions of nitrogen oxides using the most cost-effective approach. The agency expects to finalize its proposed plan by September 1998, offering Eastern states a flexible way to reduce ozone smog. The 22 states will have one year to submit their plans for reducing nitrogen oxides. EPA will identify certain locations as "transitional areas," since they will be working to meet net regional reductions. At least 100 cities and counties in the mid-Atlantic region will be eligible for this classification.

AREAS BENEFIT FROM CLEAN AIR PROGRAMS

Last summer, two major metropolitan areas in Virginia — Hampton Roads and Richmond — were redesignated to "attainment" of the health-based standard for ozone smog. Both areas benefited from less-polluting reformulated gasoline and a cutback in emissions by industrial plants during summer months.

In Pennsylvania, the Reading area met standards for "ozone attainment," and air quality data from recent years show that many other smaller communities throughout the mid-Atlantic region have less air pollution.

Enhanced exhaust testing programs for automobiles are underway in Maryland and Pennsylvania. Philadelphia motorists and residents of 14 counties in Maryland now have their vehicles inspected using a treadmill that simulates highway driving. Virginia's comparable program will apply to motorists in northern counties in early 1998, and the District of Columbia next year. The Pittsburgh area also tests using a modified inspection method.

STEPHEN C. DELANEY

An EPA field worker talks about clean industry techniques with a plant manager.

FLEXIBLE PERMITS BENEFIT COMPANIES AND COMMUNITIES

In a small community near Elkton, Virginia, pharmaceutical manufacturer Merck & Co. is testing an innovative environmental project that has won the approval of the agency, plus state and local officials and area residents. The company will spend $10 million to convert its coal-burning power house to natural gas at the company's Stonewall plant. Since natural gas is a cleaner-burning fuel, Merck will reduce its emissions of sulfur dioxide and nitrogen oxides by 60 percent, and other hazardous air pollutants by 65 percent. In addition, the company agreed to establish a plant-wide limit on the amount of other air pollutants. Compared to recent air emissions from its plant, this cap will reduce pollutants nearly 300 tons per year, a 20 percent decrease.

In return, Merck will have the flexibility to manufacture new products, increase production and make production changes as frequently as needed without having to apply for modification of its air permits. Long delays waiting for approval will be eliminated.

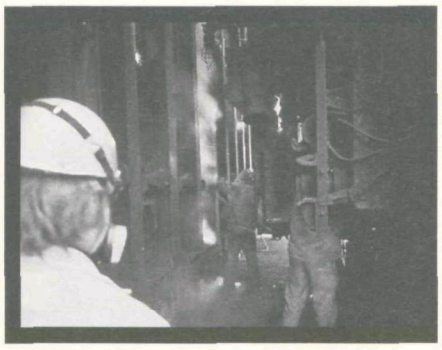
The project is called "Merck XL," short for excellence and leadership, and is an initiative worked out between the company and the mid-Atlantic regional office under President Clinton's national Project XL program.

Merck employs 800 people at its Stonewall plant to produce a variety of antibiotics and a new drug for the HIV virus. Flexibility allows the company to respond quickly to changing market conditions and product demands. The overall environmental benefits will improve visibility and reduce acid rain in and around nearby Shenandoah National

COLONIAL WILLIAMSBURG FOUNDATION

Ozone smog was no problem in the Colonies in the 17th century.

TOM MASLANY



A coke oven at U.S. Steel Clairton.

Park. The agency and state officials will be looking to determine whether site-wide emissions caps can create incentives for companies to minimize emissions.

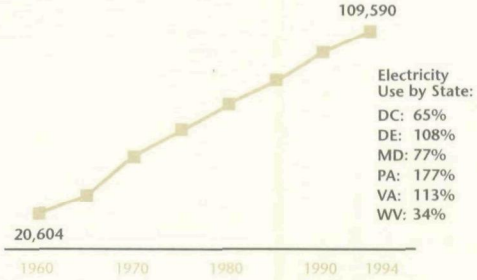
Another new permitting program gaining success in the region is the agency's Title V program, which streamlines the Clean Air Act. Companies considered major sources of air pollution can get a single permit that spells out all clean air requirements it must meet. A single Title V permit replaces several other permits, making it easier for a company to comply with environmental regulations.

In Pennsylvania, the state Department of Environmental Protection submitted 191 Title V permits for EPA to review during the first year of the program. This represents one-third of the total permits the state expects to issue. Pennsylvania's record puts it among the top states in the country that are managing Title V programs.

PROTECTING THE ENVIRONMENT BY PREVENTING POLLUTION

Voluntary programs are increasingly important at EPA, and while small in terms of budget and staffing, the return on investment is impressive. Voluntary programs began in 1991 and have evolved into 50 projects in the air, water and solid waste program offices.

Electricity Use in Region III Has Increased More Than 400% Since 1960.



Source: EIA

Traditionally, most environmental protection involves controlling, treating or cleaning up pollution. By eliminating or minimizing pollution at the source, the pollution is never created in the first place. Pollution prevention is potentially the most effective and efficient means of environmental protection. By 2000, the agency anticipates some 18,500 companies will be involved in voluntary pollution prevention programs that will save them almost $7 billion a year in energy raw materials and waste treatment and disposal costs.

One of the first — and most effective — voluntary pollution prevention programs is Green Lights. Thousands of large businesses have upgraded lighting, cut pollution and saved money. Energy is the main cause of global warming because excess emissions of carbon dioxide, methane and other greenhouse gases trap heat in the atmosphere. Smart switches dim office lights, put computers into "sleep mode," adjust thermostats, and cut electric bills when offices are vacant during lunch. The workplace is instantly restored to full productivity when employees return.

There are 100 million exit signs in the U.S., each lit by two small incandescent bulbs. Lighting those signs costs $1 billion a year, and generates more than 13 million tons of greenhouse gases. By switching to light-emitting diode technology, the signs will be lit just

as brightly using one-eighth the wattage, reducing expenditures and cutting pollution. These diode bulbs last up to 100 times longer than incandescent, and while costing twice as much, are so inexpensive to operate that they pay for themselves in less than three years.

Some 482 businesses in the mid-Atlantic states participating in the Green Lights program are saving $32 million a year in energy costs. These pollution prevention measures have eliminated carbon dioxide, sulfur dioxide and nitrogen oxides equal to the benefit of annually planting 100,000 acres of trees or removing 75,000 automobiles from the roads.

Another pollution prevention program is Energy Star, which helps small businesses conserve energy in ways that pay back costs in three years or less.

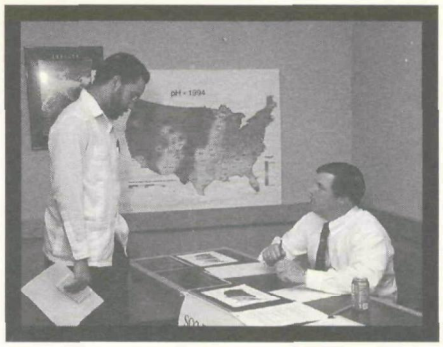
The nation's small businesses employ more than half of the nation's workforce, generate more than half of the gross national product, and are the principal source of new jobs. These businesses also waste more than one-third of their energy costs every year. Many small business owners often lack the time, money and know-how to become energy-efficient. As an Energy Star volunteer, a small business agrees to conserve energy. EPA provides technical support and public recognition.

One company in the program installed more efficient lights and infrared occupancy sensors to turn off lights when not needed by any of its 50 workers. The annual electric bill was reduced more than $11,000 and 188,000 pounds of carbon dioxide emissions were prevented each year. Another firm saved more than $21,000 in annual electric costs while achieving comparable or improved lighting for its 100 employees.

The newest program is Green Communities. An assistance kit helps residents, business, industry and government in towns and cities work together to protect environmental resources. York, Pennsylvania was named the first Green Community in October 1997. The new program helps citizens and community leaders solve problems and make decisions in ways that allow for the unique environmental, social and economic circumstances found in their own communities. The assistance kit is available to communities on the Internet at <http://www.epa.gov/region03/greenkit>.

TOM MASLANY

EPA employees Enid Gerena and Dee Evans pitch in at the Air Protection Division's annual Earth Day cleanup.



JEFF ALPER

EPA employees Jose Jimenez and Bruce Smith of the Air Protection Division at the open house to strategically plan reduction of ozone and acid deposition.

INVESTIGATING COMMUNITY HEALTH CONCERNS

In response to complaints about excessive unhealthful pollution in South/Southwest Philadelphia, EPA retained Johns Hopkins University's School of Public Health to undertake a two-year study. The goal of the pilot study, which represented a new approach to community-based environmental protection, was to provide all stakeholders with a tool for understanding and improving the environment and public health of the area. The study addressed diverse community concerns and brought together community, government and academia to address the issues heretofore raised by individuals and isolated neighborhood groups. It was the first attempt to examine a broad array of environmental and public health issues on a neighborhood level.

The report led to a working partnership with state and local government agencies who have the legal authority to act on the study's findings.

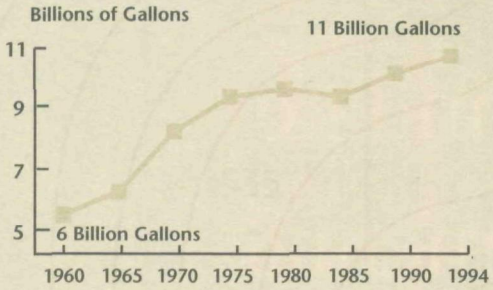
STEPHEN C. DELANEY

Focus on senior citizen health is an important component of our health initiative.

ABOUT 1,800 GALLONS OF WATER ARE NEEDED TO PRODUCE THE COTTON IN A PAIR OF JEANS, AND 400 GALLONS TO PRODUCE THE

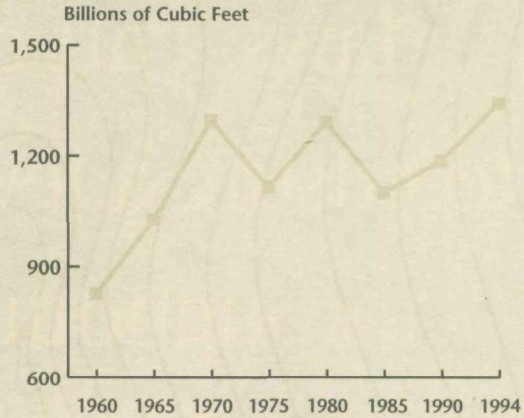
Region III at the Gas Pump

Gasoline use has increased by 83% since 1960.



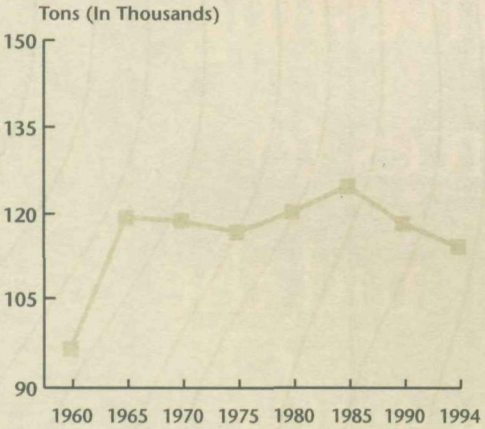
Usage by State:
VA: +147%
MD: +131%
DE: +103%
WV: +74%
PA: +42%
D.C.: -18%

Natural Gas Used by Region III



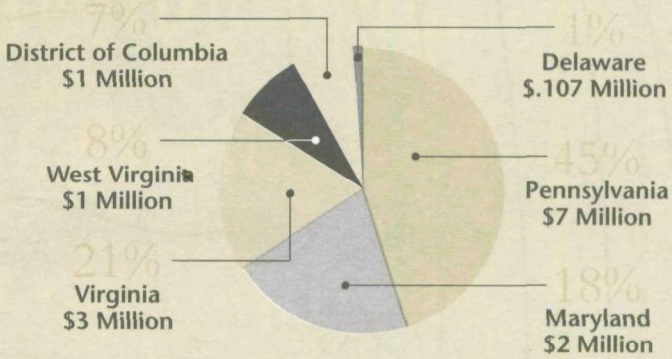
Usage by State:
DE: +440%
VA: +250%
MD: +169%
D.C.:+139%
PA: +34%
WV: -3%

Use of Coal in Region III



Usage by State:
D.C.: ↓
DE: ↑
MD: ↑
PA: ↓
VA: —
WV: ↑

Air Grants to Region III States



Fiscal Year 1997 Awards as of September 30, 1997

COTTON IN A SHIRT • IN THE SUMMER, SET CEILING FANS SO THAT WARM AIR IS PULLED UP TO THE CEILING. IN THE WINTER, REVERSE THEM

EPA has a legal mandate to enforce environmental laws. Part of that job is to ensure a level playing field throughout the country, so that businesses investing money and resources to protect public health and the environment are not at a disadvantage to companies in violation.

STEPHEN C. DELANEY

The agency has vigorously pursued those who violate environmental requirements. During the fiscal year that ended September 30, 1997, the region resolved 145 penalty cases that resulted in $20.3 million in penalties and another $53.8 million in cost recovery. In addition, polluters committed to provide an additional $9.8 million in environmental projects and services.

In a landmark victory for the environment and public health, a U.S. District Court judge in Norfolk, Virginia fined Smithfield Foods, Inc. $12.6 million, the largest trial verdict in the history of the Clean Water Act. The U.S. sued the company for polluting the Pagan River (Virginia) with illegal levels of pollutants from its slaughterhouse, falsifying documents and destroying water quality records. The Pagan River, which was on the endangered list of American rivers, has been closed to shellfish harvesting since 1970 because of high levels of coliform, an organism found in feces and often associated with bacteria known to cause serious illness in humans.

The court's ruling reinforced EPA's authority to pursue violations despite a state order that purportedly relaxed the permit discharge limits.

A consent decree with Conrail for asbestos violations at a grain elevator in the Port Richmond section of Philadelphia required the company to pay a civil penalty of $389,100. The settlement also required Conrail to spend $400,000 to provide emergency information software to response centers in Philadelphia, Bucks, Chester, Delaware and Montgomery counties. In the event of a rail accident, the software allows emergency response teams to access railroad databases to learn the contents of freight cars and how to handle any hazardous substances. Conrail also agreed to plant 500 trees in the area affected by the violation.

CHESAPEAKE BAY PROGRAM

Baltimore Harbor.

A consent order with Consolidation Coal Company prevented a catastrophic release of acid mine drainage into Buffalo Creek and the Monongahela River near Fairmont, West Virginia. An underground pool of water eight miles long and 870 feet deep collected in abandoned mines and threatened to break through the side of a mountain until Consolidation Coal lowered the level of the pool.

After years of negotiation with EPA and Justice Department attorneys, Quaker State Refining Corp. paid a $2.9 million penalty for violations that included improperly handling hazardous wastes and asbestos as well as emitting hydrogen sulfide into the air at its plant in Newell, West Virginia. The company also agreed to complete three supplemental environmental projects at an estimated cost of $4 million, and to spend millions of dollars to bring the plant into compliance.

By contrast, the management of Weirton Steel Corp. in Weirton, West Virginia reached agreement in only six months for similar violations involving hazardous wastes, asbestos and excess emissions of hydrogen sulfide. The company has agreed to

pay a reduced penalty of $3.1 million, based on Weirton's agreement to spend $6.4 million for environmental projects. The settlement saved the company, its employees and stockholders countless dollars in legal expenses, fostered modernization and improved the environment.

Westinghouse Electric Corporation agreed to pay a $100,000 penalty and spend $300,000 on projects to settle Clean Air Act violations at its incinerators in Chester and York, Pennsylvania, for releasing excessive levels of air pollutants that included sulfur dioxide, hydrochloric acid and carbon monoxide. Of particular significance is a $100,000 lead abatement project to reduce lead levels in Chester children.

Action was taken against the Philadelphia School District to clean up and properly dispose of 29 transformers that contained polychlorinated biphenyls, or PCBs, located at 12 schools. The school district will dispose of all contaminated material and remove or upgrade all of the PCB transformers within three years.

Working in partnership with the Maryland Department of the Environment, a comprehensive settlement was reached when Bethlehem Steel Corporation agreed to pay a $350,000 civil penalty and to correct environmental problems at the company's 3,000-acre Sparrow,s Point plant near Baltimore. Additionally, Bethlehem promised a voluntary 50 percent reduction of overall toxic substance releases.

Forbes Steel and Wire Corp. in Delaware must pay a $12,250 penalty for violations of the Emergency Planning and Community Right to Know Act. The company also will complete an environmental project at a cost of $256,000 to eliminate sulfuric use by using a non-polluting mechanical method.

The agency also brings criminal enforcement actions. A jury convicted Kerry Ellis and his company, Seawitch Salvage Inc., located in the Baltimore harbor area of the Patapsco River, of seven felony counts for violations of the Clean Air Act, the Clean Water Act, the Rivers and Harbors Act, and for making false statements. Migrant workers were hired to salvage pipes and metals from the ships and were directed to rip out asbestos insulation without required safeguards. The workers dumped asbestos waste and other pollutants into the harbor.

Enforcement and settlements often involve penalties that deter other violations, as well as obtaining formal commitments for actions that protect public health and the environment.

LARRY BELCHER, WEST VIRGINIA DIVISION OF TOURISM & PARKS

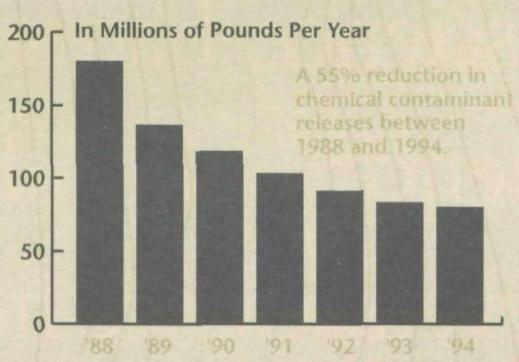
Simpson Creek Covered Bridge near Bridgeport, Harrison County, West Virginia.

JOHN RASNIC

Surf fishing.

Trends in Toxic Substances

Industry-reported releases and transfers.

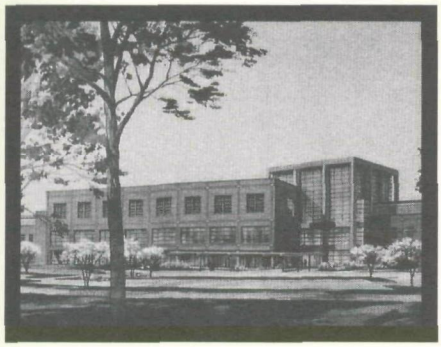


Source: Reported according to SARA Title III regs.

• ABOUT 48,000 GALLONS OF WATER ARE NEEDED TO PRODUCE THE TYPICAL AMERICAN THANKSGIVING DINNER FOR EIGHT PEOPLE

In the world of science there are many types — good science, bad science, junk science, political science and even science fiction. Good science is extremely important at EPA.

KLING LINDQUIST



The region's new Environmental Science Center is a 140,000-square-foot, 2-1/2-story building located on a 24-acre site at the eastern entrance to Ft. George G. Meade. The concrete and steel structure is finished with a brick exterior and an aluminum and glass curtain wall. Two laboratory wings are linked by a central office block to form an open U-shaped complex. Kling Lindquist of Philadelphia and Washington, D.C. did the architecture, engineering and interior design, and Bell BCI of Upper Marlboro, Maryland was the general contractor.

Good science is important in providing valid environmental indicators and testing for any product or substance that could be hazardous to public health, flora, fauna or wildlife. What is the scientific basis of EPA research? A score of national laboratories and research centers provide data for the agency. Two that are part of the National Center for Environmental Assessment are located in Cincinnati, Ohio, which are responsible for agent-specific risk assessment, technical assistance, and Research Triangle Park, North Carolina, which develops and publishes information on air quality, fuels and fuel additives.

The mid-Atlantic region has its own research laboratories. One is a ship that does marine research along the eastern seaboard. EPA also uses low-flying aircraft to study use, pollution and habitat changes along the Atlantic coast from New Jersey to North Carolina.

The region is building a new $48 million state-of-the-art environmental science center and laboratory at Fort George G. Meade, Maryland. When completed and opened in late 1998, the facility will house more than 160 scientists and administrators and add tremendously to the region's science capabilities by encouraging unprecedented collaboration between scientists.

STEPHEN C. DELANEY

The region's laboratory in Annapolis monitored and ensured the safety of the drinking water in Washington, D.C.

The Office of Analytical Services and Quality Assurance in Annapolis provides scientific and technical services to customers throughout the region. The laboratory focuses on the eastern part of the region, providing chemical analysis of water, soil, air and other environmental samples; microbiological analysis; technical assistance and training to state agencies; expert witness support for criminal investigations; and estuarine biological studies. The laboratory in Wheeling, West Virginia concentrates on fresh-water biology. The field office provides a full range of environmental programs.

The region also studied the impact of a proposal by the City of Virginia Beach to dredge more than five miles of the western branch of the Lynnhaven River to accommodate increased use by pleasure boats. More than 400 fish were collected and examined, and the study showed that this shallow water area was essential for many species of finfish, shellfish and birds. The study helped the Commonwealth of Virginia decide to limit the overall dredging depth to five feet, with shallower depths in more sensitive areas.

TRACKING ZEBRA MUSSELS

Cargo ships discharge millions of gallons of ballast water from their holds into U.S. waters. Exotic alien species in this ballast water have infested many U.S. rivers and bays, often at the expense of native marine life. The zebra mussel was introduced into the Great

Lakes in the late 1970s from bilge water and the bottom hulls of international ships. Migrating to the Ohio River from Pennsylvania and on to Kentucky, the zebra mussel is destroying the native mussels that filter and purify water, and that are used in jewelry as a culture medium for pearl oysters.

With no predators, the zebra mussel has become a major problem. Divers from the regional office are working with ocean experts to help the U.S. Fish and Wildlife Service obtain good data on the extent of this infestation by looking at the changes in mussel beds along stretches of the river in order to develop a management plan.

STEPHEN C. DELANEY

The printing industry is another important business in the mid-Atlantic states that receives help from the region's business assistance center.

OUTREACH AND EDUCATION

To help the public understand and comply with various environmental regulations, the region aggressively promotes education and outreach programs and business assistance services.

The region's toll-free customer service hotline receives nearly 30,000 calls a year. Trained staff members give callers information on a wide range of environmental subjects and all aspects of government programs. The region also has hotlines for its Business Assistance Center and Superfund programs.

STEPHEN C. DELANEY

EPA's business assistance center works closely with the dry cleaning industry to help businesses meet regulations.

PROVIDING HELP FOR SMALL BUSINESSES

The Business Assistance Center was established in 1995 to work with state and local governments, chambers of commerce and industry trade associations to help small businesses in the regulated community understand and comply with environmental issues and requirements.

Seminars and conferences were held throughout the mid-Atlantic states for printers and graphic artists, dry cleaners, auto body shops and other small businesses. Center staff trained small business counselors at 13 universities across Pennsylvania, developed plain-language compliance guides for light manufacturing in Maryland, and showed 35 small auto shops in Washington, D.C. how mishandling of liquid and solid waste from shop operations pollutes Hickey Run, a badly degraded feeder stream to the Anacostia River.

SUSAN MCDOWELL

EPA members of Women In Science and Engineering participate in Penn State's Math Options program for young women.

EDUCATING THE PUBLIC

Environmental education is directed to people of all ages. All of EPA's key programs and special initiatives have educational components. However, according to a report conducted by the National Environmental Education and Training Foundation and the Roper polling firm, two out of three adults flunked a simple test on environmental knowledge.

JOCELYN AUGUSTINO

Vice-President Al Gore and General Colin Powell rest briefly after helping build a playground with KaBOOM! At the *Presidents' Summit for America's Future* which focused on volunteerism, Philadelphia April, 27 1997

The region's Public Environmental Education Center is located in the lobby of the Region III building. Visitors — primarily students and teachers from the Philadelphia metropolitan area — learn about pollution prevention, water quality, wetlands, radon, pesticides, air quality, biodiversity, endangered species, household hazards and cleanup of hazardous waste sites.

EPA's website on the Internet provides the public with a wealth of information. The mid-Atlantic region and all EPA regions can be accessed through the main home page, <http://www.epa.gov>. The region's home page had 750,792 visits last year.

EPA further supported environmental education by funding 27 grants totaling $190,000 for schools and grassroots organizations.

For the fourth straight summer, the region hosted 26 inner-city middle school students for a six-week holistic approach to teach various environmental issues in urban communities. Field trips reinforced classroom skills taught by EPA employees and a Philadelphia science teacher. The program develops communications skills coupled with environmental knowledge, enabling the students to return to their neighborhoods and teach others about environmental issues.

HELP FROM VOLUNTEERS

VISTA/Americorps volunteers in Chester, Pennsylvania focused on lead poisoning, contaminated fish caught by local residents, and the need for community cleanup activities — problems identified by an EPA risk study. The volunteers also helped in community gardens. Their efforts increased community pride and helped individuals in neighborhoods become more self-reliant in the production of fresh food.

DALE LONG

Eighth grade students from Holy Reedemer School stencil an environmental message in English and Chinese — "Don't Pollute Our Streams" — on storm drains in Philadelphia's Chinatown. The project was sponsored by EPA's Asian/Pacific American Council of Employees.

BOB KORONCAI

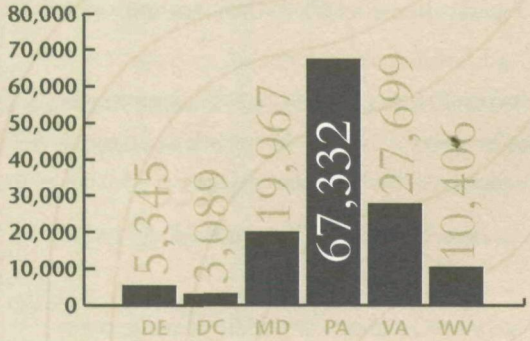
EPA Virginia water team looking for endangered mussels in the Clinch River.

ACCESS TO EPA REGION III

Customer Service Hotline	(800) 438-2474
Business Assistance Center Hotline	(800) 228-8711
Superfund Hotline	(800) 553-2509
Internet Address	http://www.epa.gov/region03
Green Communities	http:www.epa.gov/region03/greenkit
Envirofacts	http://www.epa.gov/enviro
Surf Your Watershed	http:/www.epa.gov/surf/iw

AND IS RECYCLED THROUGHOUT TIME. ACTUALLY, IT IS POSSIBLE TO DRINK WATER THAT WAS PART OF THE DINOSAUR ERA

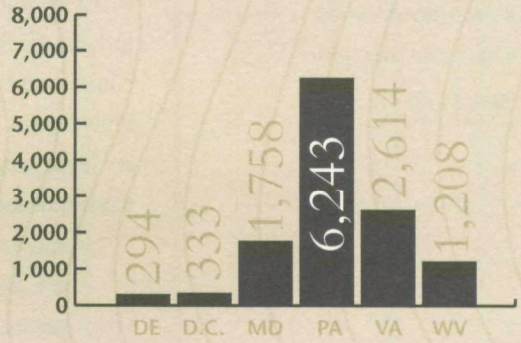
People Employed in Environmental Companies



1996 Region III Total: 1,286,600

Source: Environmental Business International, Inc., San Diego, Calif.

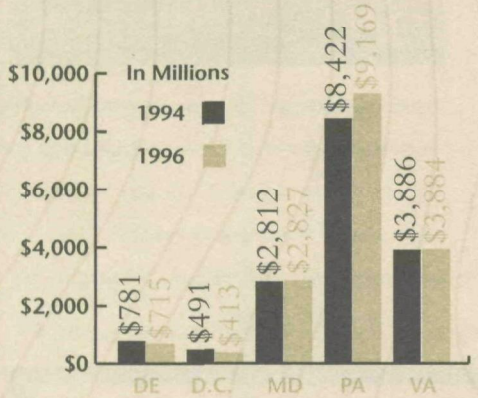
Companies Providing Environmental Products & Services



1996 Region III Total: 115,400

Source: Environmental Business International, Inc., San Diego, Calif.

Total Revenues

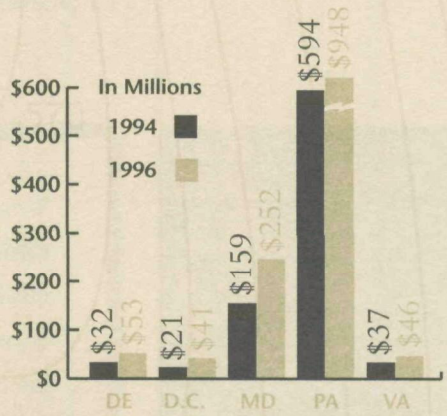


1994 Region III Total: $170,436

1996 Region III Total: $178,320

Source: Environmental Business International, Inc., San Diego, Calif.

Total Export Revenues



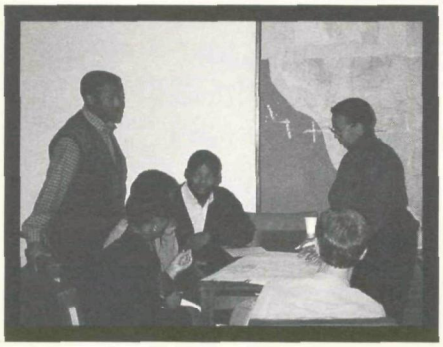
1994 Region III Total: $10,800

1996 Region III Total: $15,790

Source: Environmental Business International, Inc., San Diego, Calif.

THE AVERAGE HOUSE IS RESPONSIBLE FOR MORE THAN TWICE THE LEVEL OF CARBON DIOXIDE EMISSIONS THAN THE AVERAGE CAR • IT CAN TAKE

JOHN ARMSTEAD



Participants at a principles of solid waste management training course, held in East London, South Africa, work through a case study exercise.

THE ENVIRONMENTAL INDUSTRY — A GROWING BUSINESS

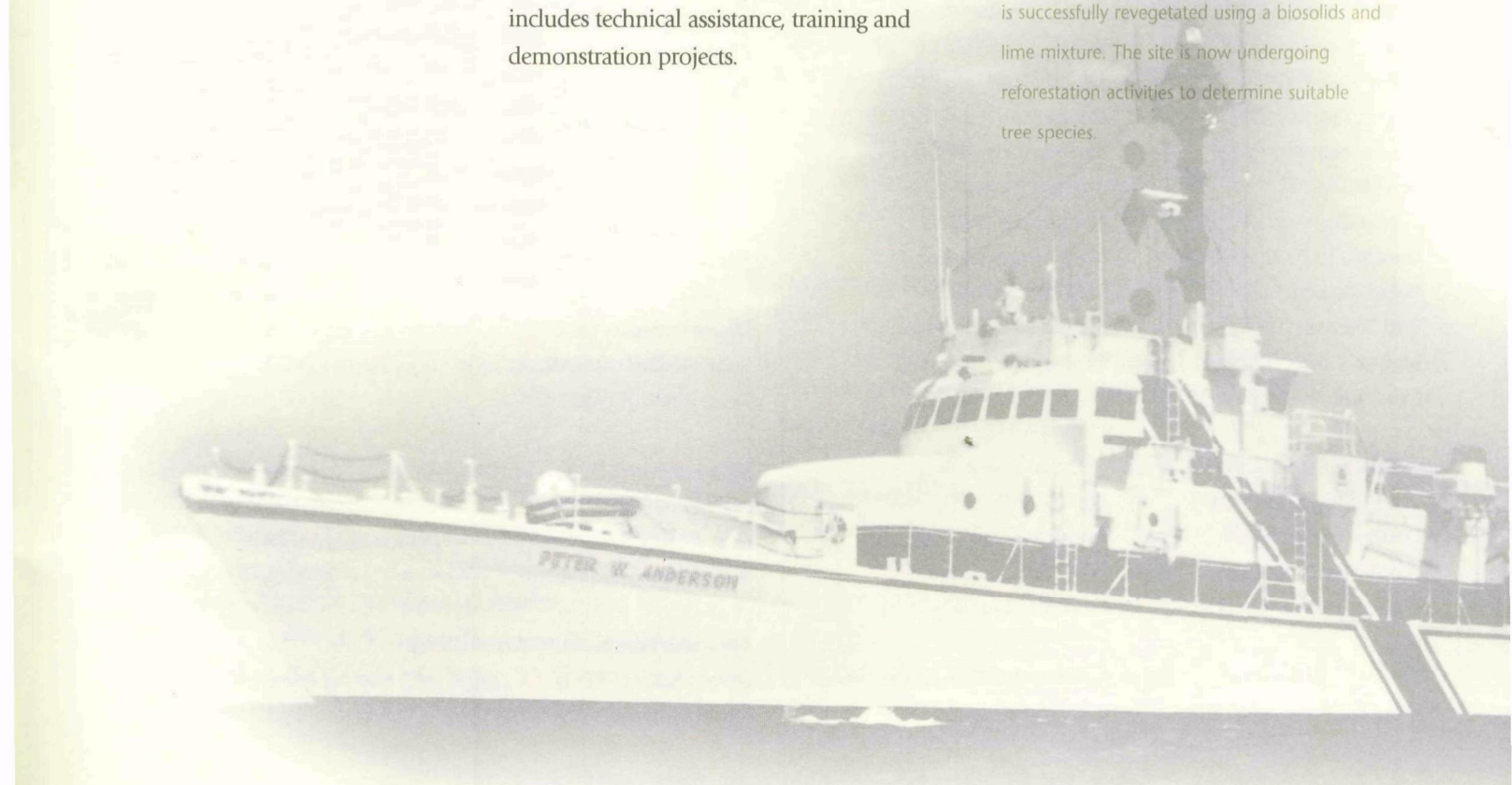
The environmental industry is a growth business and is flourishing in the mid-Atlantic states. In 1996, 1,286,500 people were employed nationwide at 115,400 companies responsible for total revenues of $178,320,000. In the mid-Atlantic states, 133,838 people were employed at 12,450 companies that had total revenues of $17,008,000. Of significant importance is the growth of American environmental technology, products and services, which amounted to $15,790,000, a 50 percent increase in just two years. This state-of-the-art technology is a popular export, helping America's balance of trade.

INTERNATIONAL

Region III has an active international program working on projects which combine the needs of countries with EPA expertise and funding from USAID and the World Bank. Those countries include, but are not limited to, Poland, Republic of South Africa, Ghana, China and Taiwan. Region III has developed international training modules on enforcement, contract procurement and management, risk communications, risk management and solid waste management. We focus on building capacity for environmental management. This includes technical assistance, training and demonstration projects.

KEN PANTUCK

A former smelter waste site in Katowise, Poland is successfully revegetated using a biosolids and lime mixture. The site is now undergoing reforestation activities to determine suitable tree species.



REGION III SPECIAL AWARDS

EEO AWARD
Jon Capacasa (CBPO)

INSTRUCTOR OF THE YEAR
The Seven Habits trainers: Robert Mitkus (WPD) , Peter Schaul (HWMD), Patricia Krantz (EAPD) and Leanne Nurse (OEA).

SECRETARIAL EXCELLENCE AWARD
Kim Lonasco (CBPO)

REGIONAL ADMINISTRATOR'S AWARD FOR EXCELLENCE
Lillian Smith (OPM)

HUMAN RESOURCES ACHIEVEMENT AWARD
Betty Inge (OPM)

LORRAINE URBIET COMMUNICATOR OF THE YEAR AWARD
Joan Goodis (EAPD)

GLEN WITMER AWARD
Christine Wagner (HWMD)

COMBINED FEDERAL CAMPAIGN AWARD
Jeffrey Burke (EAPD)

PUBLIC SERVICE AWARD
Frank Ciambrano (WPD)

EPA HEADQUARTERS HONOR AWARDS

GOLD MEDAL
Michael Burke (OEA)

GOLD MEDAL — District of Columbia Drinking Water Team

Victoria Binetti (WPD)
Jeffrey Hass (WPD)
George Rizzo (WPD)
Leanne Nurse (OEA)
Leo Clark (EAPD)
Gerard Donovan (EAPD)
Gretchen Klebasko (EAPD)
Robin Costas (EAPD)
Fred Foreman (EAPD)
Marilyn Gower (EAPD)
Charles Hufnagel (EAPD)
Ronald Jones (EAPD)
Gerard Crutchley (EAPD)
George Houghton (EAPD)
Eric Bissonette (Region 1)
Kim Fox (Region 1)
Darren Lytle (Region 1)
Mark Meckes (Region 1)
Kevin Reilly (Region 1)
Maureen McClelland (Region 1)
Clive Davies (Region 1)

SILVER MEDAL — Pennsylvania Air Enforcement Team

Bernard Turlinski (ARTD)
David McGuigan (ARTD)
Paresh Pandya (ARTD)
Danielle Baltera (OIG)
Carl Jannetti (OIG)
Patrick Milligan (OIG)
David Schultz (Region 5)
Brent Marable (Region 5)

PAUL G. KEOUGH AWARD FOR ADMINISTRATIVE EXCELLENCE
Laura DiCriscio (HWMD)

REGION III HONOR AWARDS

BRONZE MEDALS FOR INDIVIDUAL ACHIEVEMENTS

Francesca DiCosmo (OEA)
Richard Ponak (ARTD)
William Muir (EAPD)
Charles Weisberg (EAPD)
Thomas Henry (WPD)
Vincent Zenone (HWMD)
Joseph Donovan (ORC)
Alan Brown (HWMD)
David West (OPM)
Kenneth Pantuck (WPD)

BRONZE MEDALS FOR GROUP ACHIEVEMENTS

BEPAC Student Environmental Development Program Team:

Romona McQueen (OPM)
Larry Brown (HWMD)
Vance Evans (HWMD)
Carletta Parlin-Rivers (HWMD)

Mobay Case Negotiation Team:

K. K. Wu (ARTD)
Jonathan Allen (ARTD)
Edward Cohen (ARTD)
Mikal Shabazz (HWMD)
Benjamin Fields (ORC)
Dean Jerrehian (ORC)
Henry Lau (HQ-OPPT)
Dr. Doyoung Lee (HQ-OPPT)

Pittsburgh Ozone Requirements Team:

Marcia Spink (ARTD)
Maria Pino (ARTD)
Kevin McLean (OGC)
Kendra Sagoff (OGC)

Allegheny County Settlement Group:

Thomas Casey (ARTD)
Cecil Rodrigues (ORC)

Environmental Justice Enforcement Group:

Kimberly Peck (ARTD)
Tia Chambers (ARTD)
James Topsale (ARTD)
Humberto Monsalvo (ARTD)
Dean Jerrehian (ORC)
Angelo D'Angelo (ORC)
Donna Travia (ORC)

Green Lights Team:

Mindee Denmark (ARTD)
Carol Febbo (ARTD)
Elizabeth Barnes (ARTD)
Robert Chominski (ARTD)
Richard Killian (ARTD)
Ellen Fishman (ARTD)
Pennsylvania IG Group:
Tia Chambers (ARTD)
Betty Harris (ARTD)

Riparian Forest Buffers Initiative Technical Support Team:

Mary Price (CBPO)
Al Todd (USFS)
Richard Cooksey (USFS)
Richard Everett (USFWS)
Patricia Engler (NRCS)

Anacostia Ecosystem Initiative Group:

Beverly Baker (CBPO)
Kimberly Lonasco (CBPO)
Michael Burke (OEA)
Leanne Nurse (OEA)

Anacostia Ecosystem Initiative Group Continued:

Eric Ashton (EAPD)
William Arguto (HWMD)
Vernon Butler (HWMD)
Nicholas DiNardo (HWMD)
James McCreary (HWMD)
Jeffrey Pike (HWMD)
Claudette Reed (ORA)
Reginald Harris (ORA)
Frank Fritz (ORC)
Adolphus Williams (ORC)
David Arent (WPD)
Elaine Harbold (WPD)

Canaan Valley Watershed Protection Initiative Team:

John Forren (EAPD)
John Schmidt (USFWS)
Christopher Clower (USFWS)

The Quality Assurance Task Force:

Thomas Slenkamp (EAPD)
Diann Sims (EAPD)
Charles Jones (EAPD)
David Friedman (HWMD)
Eric Johnson (HWMD)
Stuart Kerzner (WPD)
Theresa Martella (CBPO)
Margaret Cardamone (ORC)
Frederick Warren (OPM)
James Smith (ARTD)

Watershed Monitoring Team:

Edward Ambrogio (EAPD)
Margaret Passmore (EAPD)
James Green (EAPD)

Fike Settlement Team:

Eugene Wingert (HWMD)
Charlene Arnold (HWMD)
James Heenehan (ORC)
Denise Harris (ORC)
Nancy Flickinger (DOJ)

Weirton Multi-Media Enforcement Team:

Diane Ajl (ORC)
Daniel Boehmcke (ORC)
Philip Yeany (ORC)
Judith Hykel (ORC)
Louis Ramalho (ORC)
Virginia Cody (ORC)
Kenneth Cox (HWMD)
Joel Hennessy (HWMD)
David Friedman (HWMD)
Deborah Goldblum (HWMD)
Donna McCartney (HWMD)
Scott McPhilliamy (EAPD)
James Bailey (EAPD)
Michael Ioff (ARTD)
Leonard Nash (WPD)
David Arent (WPD)
Steve Sisk (Region 8)
Kenna Yarborough (Region 8)
William Hutchins (DOJ)

Quaker State Multi-Media Enforcement Team:

Estena McGhee (HWMD)
Joel Hennessy (HWMD)
Deborah Goldblum (HWMD)
David Friedman (HWMD)
Elizabeth Ann Quinn (HWMD)
Robert Greaves (HWMD)
Mary Beck (HWMD)
Elizabeth Barnes (ARTD)
Angelo D'Angelo (ARTD)
Richard Killian (ARTD)
Samantha Fairchild (ORC)
Diane Ajl (ORC)
Nancy Flickinger (DOJ)
Julie Kaplan (DOJ)
William Moore (DOJ)

Southern Maryland Wood Treating Re-Rod Team:

David Sternberg (OEA)
Kathryn Davies (HWMD)
Peter Ludzia (HWMD)
Terry Stillman (HWMD)
Lesley Brunker (HWMD)
Stephanie Dehnhard (HWMD)
Roy Smith (HWMD)

Greenwood Chemical Communication Team:

Stephanie Branche (OEA)
Larry Brown (HWMD)
Philip Rotstein (HWMD)
Peter Schaul (HWMD)
Rex Goodnight (COE)

Regional Land Support Staff:

Geoff Fala (OPM)
Gregory Pacana (OPM)
Richard Foltz (OPM)
Patricia Moyer (ARTD)
Olga Serrano (ARTD)
David Barto (EAPD)
Denise Buckingham (EAPD)
Cynthia Caporale (EAPD)
Arnold Starnes (HWMD)
Alicia Walls-Morris (HWMD)
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Putting information into
the hands of the public
is the single most effective
action we can take
to protect the environment.
—Carol Browner

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