ORSANCO 1994

Ohio River Valley Water Sanitation Commission

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* As of December 31, 1994

On the front cover: Ohio River Sweep Poster Contest Grand Prize winner, Elliott Giles, Age 17, Cincinnati, OH, Moeller High School

TO:

The Honorable Jim Edgar, *Governor of Illinois*

The Honorable Evan Bayh, *Governor of Indiana*

The Honorable Brereton C. Jones, *Governor of Kentucky*

The Honorable George E. Pataki, *Governor of New York*

The Honorable George V. Voinovich, *Governor of Ohio*

The Honorable Thomas J. Ridge, *Governor of Pennsylvania*

The Honorable George Allen, Jr., *Governor of Virginia*

The Honorable W. Gaston Caperton III, *Governor of West Virginia*

and

The Honorable William J. Clinton, *President of the United States*

The Commissioners of the Ohio River Valley Water Sanitation Commission (ORSANCO) – an interstate water pollution control commission created jointly in 1948 by the State of Illinois, the State of Indiana, the Commonwealth of Kentucky, the State of New York, the State of Ohio, the Commonwealth of Pennsylvania, the Commonwealth of Virginia and the State of West Virginia, with approval of the Congress of the United States – respectfully submit the following report of the Commission's activities in 1994.

ORSANCO

OHIO RIVER VALLEY WATER SANITATION COMMISSION
AN INTERSTATE AGENCY
ESTABLISHED JUNE 30, 1948

Ohio River Valley Water Sanitation Commission
5735 Kellogg Avenue
Cincinnati, Ohio 45228-1112
513/231-7719

Chairman's Message

Improving Water Quality for Future Generations

Chairman, Ronald R. Potesta

It is the responsibility of each generation to leave a better world for their children.

When the governors of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia united in 1948 to sign the Ohio River Valley Water Sanitation Compact, it was their desire to improve water quality in the Valley for their children, grandchildren, and great-grandchildren. Since the signing of the Compact, many factors have contributed to cleaner streams in the Valley. However, no factor has been more important than the commitment of the states, federal agencies, local governments and private interests working together to improve the Ohio River through the Ohio River Valley Water Sanitation Commission (ORSANCO).

Fish, which once left the Ohio River to seek better habitats, are returning and flourishing in most areas. Paddlefish, sauger and other sport fish are migrating to its upper reaches, regions once clogged with pollution. This migration, in turn, is resulting in a blossoming sport fishing industry. ORSANCO's yearly fish population surveys have shown a greater diversity of specimens collected in many stretches.

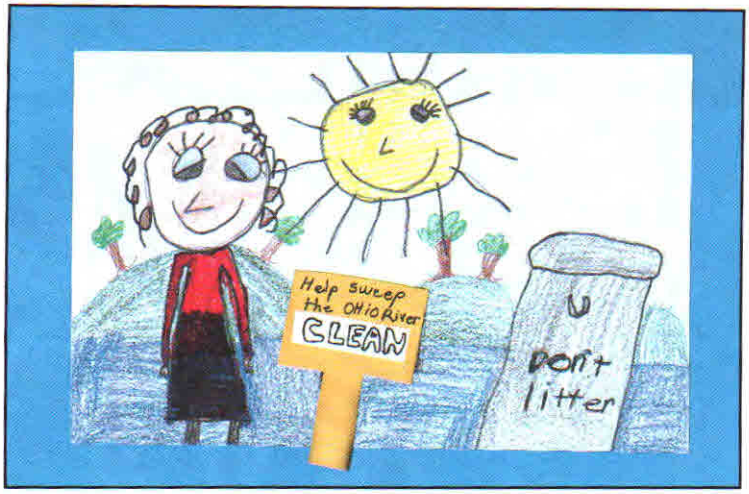
As the River becomes cleaner, boating and skiing are gaining in popularity. Many cities are spending millions of dollars to spruce up their river fronts in the hope of drawing more people to this wonderful resource. River-based events, such as festivals, regattas, and fishing tournaments, attract millions of visitors to the Ohio River Valley each year.

While its water quality has improved and Valley residents are expressing a renewed pride in their river, there is still much to be done. Scattered throughout this report are reprints of posters created by the Valley's youth for an Ohio River Sweep Poster Contest. These young people offer suggestions to help improve water quality, and their art work reflects concern for preserving and protecting the Ohio River.

As you enjoy their creations, let them serve as a reminder of the Commission's accomplishments and initiatives over the past 46 years. Among past successes are the reduction or elimination of much of the river's degradation from point sources -- municipal and industrial waste water discharges. This achievement resulted from the Commission's remarkable ability to form successful joint partnerships with other government entities, industries, businesses, utilities and individuals. The year 1994 was no less exceptional in this regard.

Today, nonpoint source pollution, usually associated with past and present land use activities, is the most widespread cause of remaining

Sara Malone, Age 8
Cincinnati, OH
Cameron Park Elementary School



water quality problems in the Ohio River. In response the Commission appointed a Nonpoint Source Pollution Abatement Task Force in 1993 to develop a coordinated strategy to address this form of pollution. This Task Force, which includes diverse representation from Valley industries, municipalities and governments, will continue their work on the strategy into the next year.

During 1994, Commissioners took the opportunity to meet with their respective state and federal representatives in Washington, DC when the September Commission meeting was scheduled in the nation's capital. Many existing contacts were strengthened and important new cooperative relationships developed from these meetings.

Also at the September meeting, the Commission authorized the development of a strategic planning initiative to maintain and enhance ORSANCO's direction, and focus on specific objectives and associated activities.

Continuing its leadership role in pollution abatement, ORSANCO held a combined sewer overflow (CSO) public symposium in July, where state and federal environmental agencies and local sewer districts presented in-stream monitoring strategies for the Ohio River.

In 1994, a cooperative agreement between the Commission, the U.S. National Park Service Rivers, Trails and Conservation Assistance Program and the Ohio River Basin Commission resulted in the publication of *"What's a River Worth?"* This report, based on an evaluation of readily-available information pertaining to the Ohio River's economic, cultural and environmental impacts, will draw attention to its local, regional and national significance.

The ORSANCO/Ohio River Users Program, representing another successful association between the Commission and Valley industries, businesses, public and private utilities, barge towing, and other river users, merges resources and expertise of ORSANCO with river users to implement selected scientific studies in the Ohio River and its tributaries. In connection with the startup of this unique partnership, in 1994, the Commission appointed an Advisory Committee, and approved a first project -- Development of an Ohio River Biological Management Information System.

The Commission formed a new link with the U.S. Coast Guard this past year when a representative from this organization was appointed to the Commission's Technical Committee. This new member will forge a stronger bond between the two agencies in the coming years.

Finally, the continued success of the nationally-recognized Ohio River Sweep would not be possible without the support and cooperation of other agencies, Valley businesses, industries,utilities and private citizens. In 1994, more volunteers and businesses joined forces than in all the previous years, and the Poster Contest gained greater recognition for this event, thus, enabling ORSANCO to present a child's perspective on pollution in the Valley. It is for these children and future generations that the Commission and its many cooperating partners continues its efforts to improve water quality in the Ohio River.

Water Quality Assessments

The guiding principle of the Ohio River Valley Water Sanitation Compact is that pollution originating in one state shall not injuriously affect the interstate waters of another state within the District.

Toxic substances, sediment, sewage and other contaminants enter surface water from numerous sources. This pollution generally results from activities associated with industry, agriculture, transportation, resource extraction and urbanization. Because of the interstate nature of such pollution on the Ohio River, states that border the River have delegated responsibility for monitoring to ORSANCO, thus, minimizing duplication of programs and obtaining consistent results.

To assess the effects of pollution on the Ohio River, the Commission operates water quality monitoring programs and conducts special studies and surveys of water quality conditions in the main stem and lower reaches of several tributaries. The Commission's monitoring programs include: year-round bimonthly sampling for physical properties and the presence of various chemical constituents; biological assessments of fish and macroinvertebrates; and dissolved oxygen and bacteria monitoring during the recreational season.

Special studies and surveys during 1994 included: intensive biological surveys in the Greenup and Newburgh Pools, a pesticide survey in the Lower Ohio River Basin, and special studies in the Huntington and Wheeling, WV areas to demonstrate methods for detecting the impacts of combined sewer overflows (CSOs).

Bimonthly Sampling

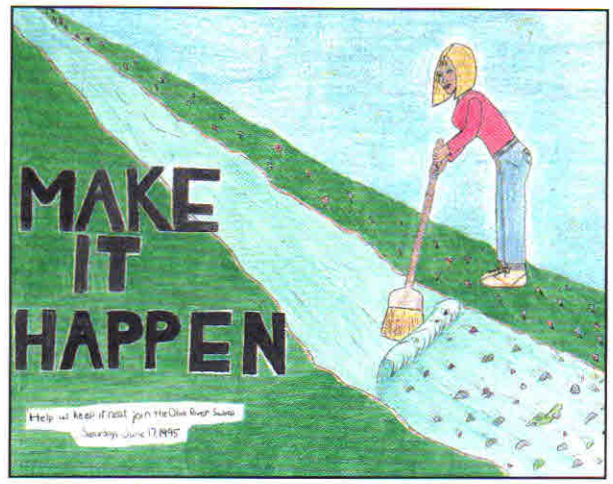
Evaluation of water quality trends and indentification of pollution types and possible sources are important to ORSANCO's water quality monitoring efforts.

The Commission collects bimonthly samples from the Ohio River and lower reaches of its major tributaries. These samples are analyzed for certain physical and chemical properties, and for various pollutants, such as cadmium, mercury, zinc, and cyanide. ORSANCO sets water quality criteria for substances which are toxic to humans and aquatic organisms.

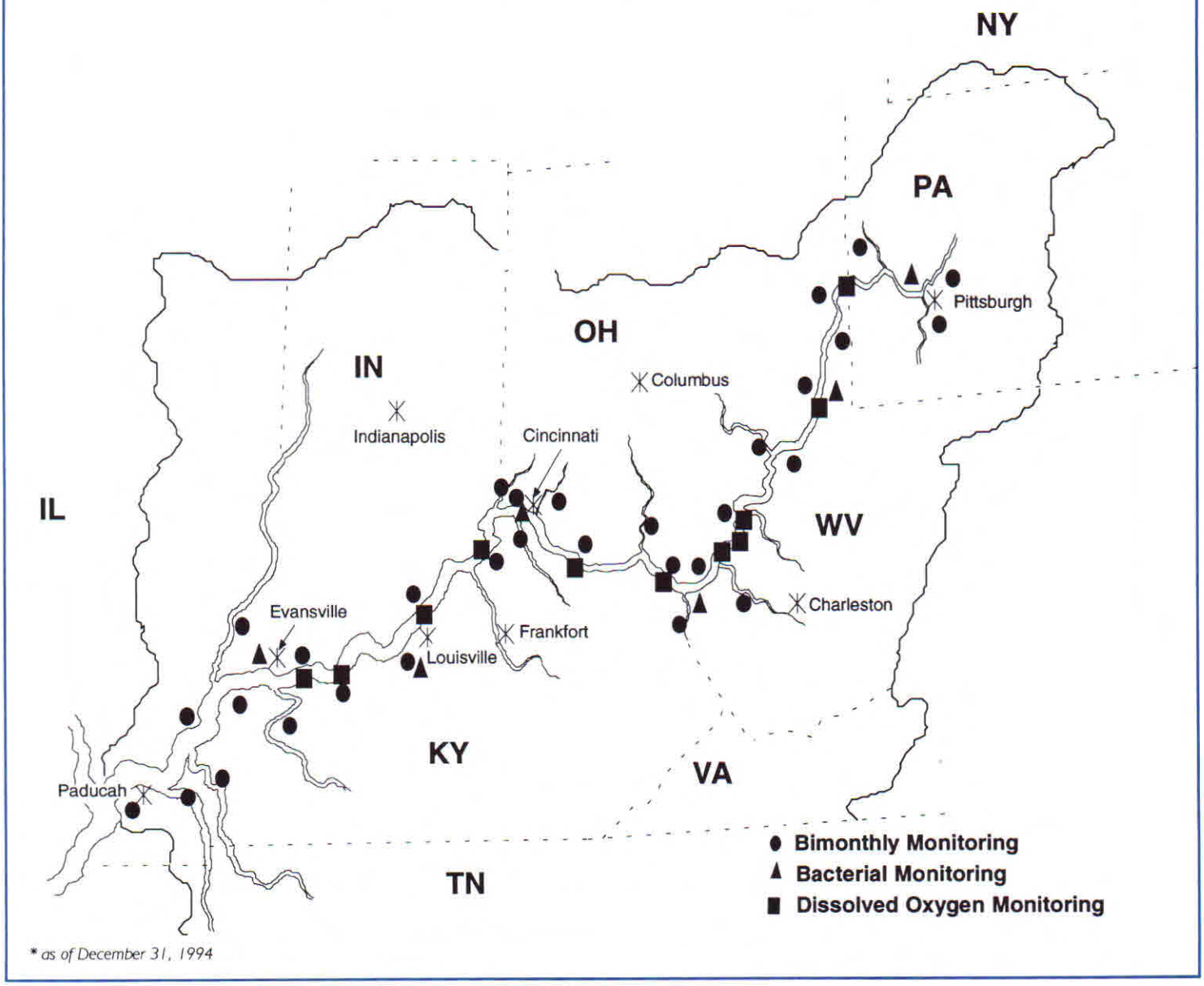
For the first six months of 1994, ORSANCO operated 30 sampling stations – 17 on the Ohio River and 13 on major tributaries. A new site on the Tennessee River was established in July, bringing the total sampling stations to 31.

Sampling data suggested good water quality at most sites in 1994. There were no detections of mercury, zinc or cyanide. However, cadmium exceeded the Commission's aquatic life criteria 13 times, or in 7 percent of the collected samples, and copper exceeded 4 times, or in 2 percent of samples. The data were comparable to 1993 results.

First Place - Middle School
Keri Harris, Age 13
Argillite, KY
Wurtland Middle School



ORSANCO Ambient Monitoring Network*



* as of December 31, 1994

Biological Assessments

The health of a waterbody can be determined by assessing its aquatic communities.

To measure the effectiveness of pollution control programs on Ohio River water quality, and to improve the base of science necessary for effective water quality management, the Commission conducts yearly assessments of the river's biological communities. Historically, biological assessments included fish and macroinvertebrate population surveys, and intensive studies in selected areas of the river. In recent years, ORSANCO began investigating better methods of assessing Ohio River biological communities. Among these methods are the evaluation of all components of a healthy aquatic community -- what species are present, what they consume, what conditions are necessary for their survival.

In 1994, the Commission initiated development of an Index of Biotic Integrity (IBI) for the Ohio River. When completed, the Index will provide a ranking or scoring system for fish species collected during surveys. By evaluating a variety of environmental conditions, such as habitat and water quality data, the IBI will assist in overall water quality assessments.

The following surveys are part of a multi-year strategic effort to develop better techniques for fish and macroinvertebrate analysis.

Ohio River Zebra Mussel Infestation

Zebra mussels, an exotic mussel species originally from the Caspian Sea, arrived in this country in 1988 and have spread throughout the inland waterways. The first confirmed sighting in the Ohio River occurred October 1991 near Paducah, KY. These mussels attach themselves to man-made structures or natural debris in the water, often clogging industrial, public drinking water, and power plant intakes. They also can disrupt aquatic ecosystems.

During ORSANCO's Newburgh Pool intensive survey, numerous, dense colonies of zebra mussels were encountered. In these areas of infestation, extremely clear water was present, and gizzard shad, a fish species used as a source of food by certain sport fish, were not as prevalent as in other pools. Further study is needed to understand the impact of zebra mussel activity on native aquatic species.

Annual Mid-Pool

ORSANCO conducted its annual mid-pool population survey in all navigational dam pools below Cincinnati in 1994. Two areas in each location were surveyed, allowing for a more comprehensive assessment of the fish population. Macroinvertebrates were sampled at one location within the pool.

Greenup Pool

In 1993, ORSANCO performed a biological survey in the Greenup Pool, a 61-mile navigational pool from the Robert C. Byrd (Gallipolis) Dam to the Greenup Dam. To better understand the biological community in this pool, the Commission returned in 1994 to conduct a follow-up intensive survey. In addition to fish and macroinvertebrate collection, ORSANCO evaluated habitats within this pool. Eight areas, or zones, in the Greenup Pool were surveyed three times throughout the summer and fall of 1994 to determine if seasonal variations occurred. Results indicated variation in certain aspects of these communities, which may be related to habitat or seasonal differences, or to other environmental factors in each location.

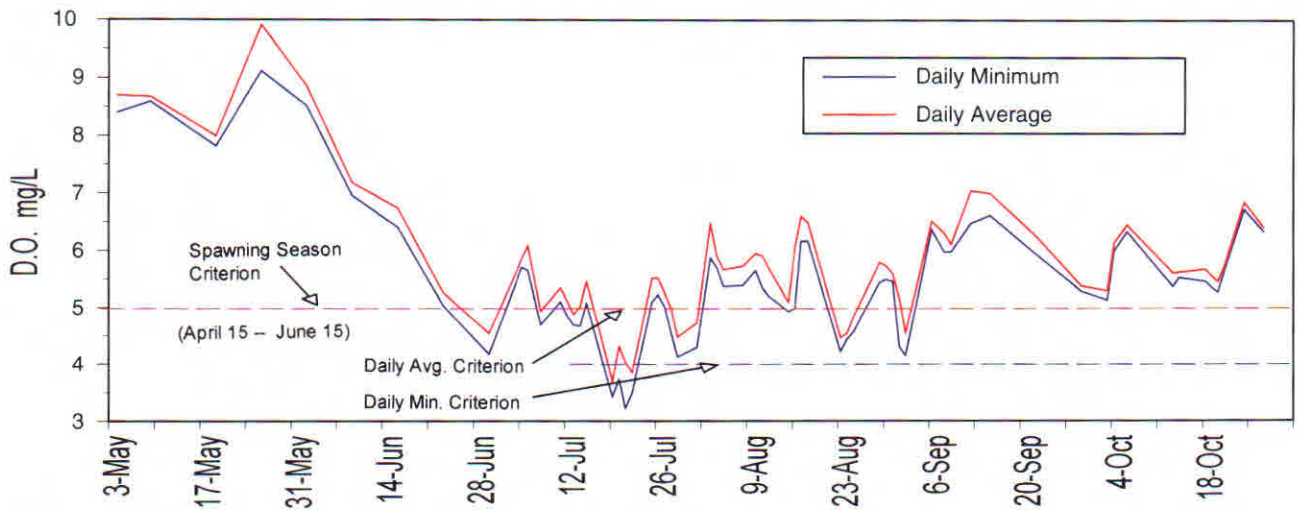
Jennifer Light, Age 17
Cincinnati, OH
New Richmond High School

Newburgh Pool

In the past, ORSANCO's biological monitoring efforts consisted of studies limited locationally to lockchambers. Because there are 12 lock and dam structures on the upper half of the river versus 8 on the lower half, more historical data are available for upper regions. The Upper Ohio River is an area of intense industrial development and large urban centers. Geology and land-use activities are significantly different in the two regions. To better understand the conditions in the lower river and to build a data base for this part of the river, the Commission completed an intense fish and macroinvertebrate population survey at 28 sites in the Newburgh Pool (from Cannalton Dam to Newburgh Dam) in 1994.

Dissolved Oxygen Monitoring

Dissolved Oxygen Readings at Markland Dam – 1994



Mimimum levels of oxygen must be maintained to support a healthy Ohio River aquatic community.

From May through October, the months when low dissolved oxygen levels can occur due to warm, dry weather conditions, ORSANCO monitors dissolved oxygen levels at Ohio River navigational dams. This information, received from electronic monitors operated at 11 locations by the U.S. Army Corps of Engineers (COE) or hydropower plants, indicates if corrective actions, such as supplemental aeration at navigational dams, are needed.

For the second consecutive year, low dissolved oxygen levels were observed at some monitoring sites. The chart above shows readings at the Markland Dam in the Lower Ohio River. In 1994, the Commission met with state and federal regulatory agencies, hydropower representatives and the COE to develop recommendations for addressing impacts of existing and future hydropower operations on dissolved oxygen concentrations in the Ohio River.

Bacteria Monitoring

The presence of certain bacteria in the Ohio River can pose health risks to those who have contact with the water.

Problem Areas of the Ohio River

Bacteria levels in the Ohio River may fluctuate rapidly due to rainfall, an accidental discharge or spill, or other factors. Having contact with the water when bacteria levels are elevated increases the risk for humans to develop sore throats, gastrointestinal illnesses, ear and eye infections and other health problems.

Boaters, swimmers, and others who come in contact with the Ohio River should be aware of areas with recreation advisories. Check with local health departments for the most current information on advisories.

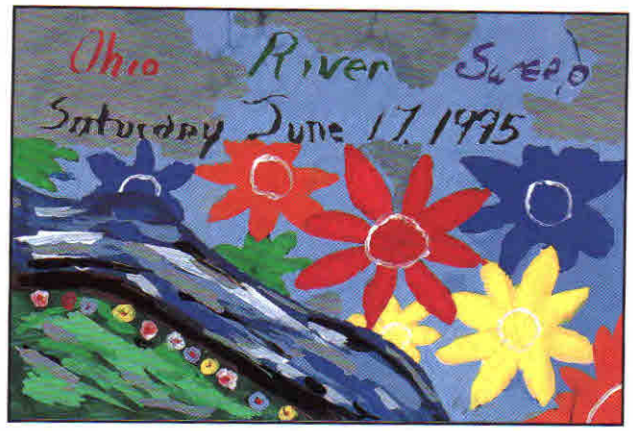
Of the six sites ORSANCO monitored for bacteria, Pittsburgh, PA; Wheeling and Huntington, WV; Cincinnati, OH; Louisville, KY; and Evansville, IN all recorded violations of the Commission's bacteria limits in 1994.

To assure the river's suitability for human contact which may occur from recreational use, the Commission monitors from May through October (the recreation season) for fecal coliform and *E. coli* bacteria. The presence of these bacteria can indicate contamination from human or animal waste, and may suggest the existence of more harmful pathogens.

ORSANCO's monitoring sites are located downstream of major Ohio River cities. During the 1994 recreation season, the Commission collected samples five times monthly from six stations. At each station, these five samples are used to compute a monthly average, which is then compared to the Commission's criterion for bacteria. Data indicated continuing problems with elevated bacteria levels. Out of 36 possible monthly exceedances, 19 violated ORSANCO's water quality criteria.

At the completion of 1994 sampling, three years of data have been collected from most sites. A detailed study of bacteria levels correlated with various factors, such as river flow and stage, precipitation, and temperature, is being conducted. The report will be completed in 1995.

Alicia Sellers, Age 13
Indian Creek Junior High School
Wintersville, OH



Biennial Summary of Water Quality Conditions

In accordance with Section 305(b) of the federal Clean Water Act, every two years, ORSANCO prepares a comprehensive report on Ohio River water quality conditions for the six states that border the river.

The Commission has been charged by the states of Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia with responsibility of monitoring and assessing the conditions of the Ohio River, and preparing a biennial comprehensive report on water quality conditions for the states. This information is reported to U.S. EPA and in turn, is presented to Congress.

ORSANCO defines specific water quality objectives for the Ohio River. These objectives reflect water quality conditions necessary to attain the river's "designated" uses -- as a public and industrial water supply, for recreational activities, and as a home for a healthy and diverse aquatic community. The river is rated on how well it supports each use: *fully supporting, partially supporting, or nonsupporting.*

In 1994, the Commission completed its biennial assessment for the period October 1, 1991 through September 30, 1993. Highlights of the report are as follows:

- The upper portion of the river *fully supports* the public water supply use; however, the lower river from the Markland Dam to the Mississippi River is classified as *partially supporting* due to the seasonal presence of the herbicide atrazine.

- Fish surveys indicate that the river supports an abundant and relatively diverse population of fish, with more than half of Ohio River navigational pools listed as *fully supporting* the warm water aquatic life use.

- Results of fish tissue analyses suggest river-wide contamination in certain species, particularly catfish and carp, from polychlorinated biphenyls (PCBs) and chlordane. Due to contamination from these toxins, states have issued advisories against consuming certain fish from the Ohio River. Based on these advisories, the entire river is classified as *partially supporting* the fish consumption use.

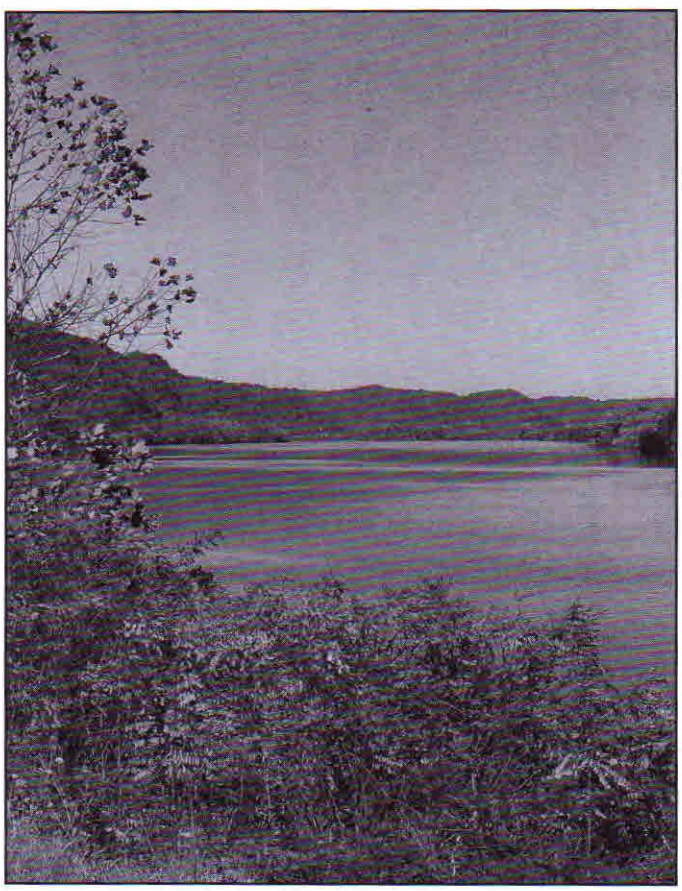
- Because the stream criteria for bacteria are frequently exceeded in the Ohio River, especially in areas downstream of large urban centers, the river is listed as *nonsupporting* the contact recreation use in the six areas monitored by ORSANCO. Data for other portions of the river not monitored by the Commission are collected by water utilities upstream of cities. These areas *partially support* this use.

Pollution Control Standards

The Compact authorizes the Commission to adopt and enforce pollution control standards for discharges to the Ohio River.

In accordance with the Ohio River Valley Water Sanitation Compact, ORSANCO maintains waste water effluent Pollution Control Standards for the Ohio River that must be met by all dischargers. These Standards are applied by the member states through National Pollutant Discharge Elimination System (NPDES) permits. The Commission reviews and comments on all draft permits for Ohio River discharges issued under the NPDES program.

Every three years, the Commission reviews its Standards to make certain they are based on the most current knowledge and respond to contemporary concerns. The most recent triennial review process will begin in 1995, and will include public workshops followed by a formal comment period for public input. The process will be completed with publication of the 1996 edition of the Standards.

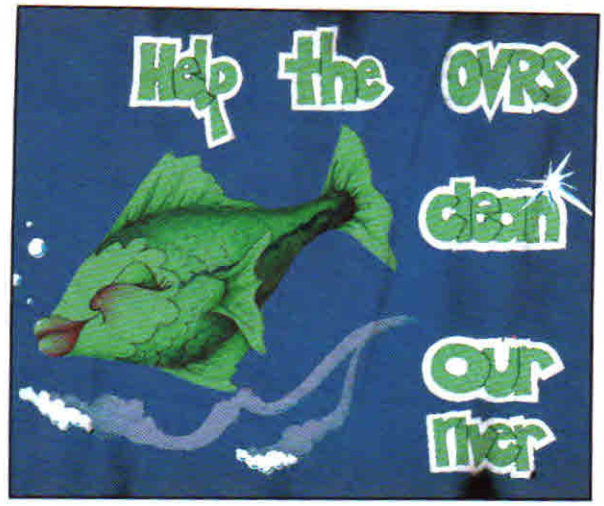


Historically, municipalities and industries contributed considerable amounts of pollution to the Ohio River. With enactment of the Commission's first standards in 1951, and periodic implementation of more advanced standards for such discharges, this source of degradation has been greatly reduced.

To ensure that the Commission's Standards are being achieved, the Commission tracks effluent quality for selected dischargers, including high-volume dischargers (greater than 10 million gallons per day) and those with prior compliance problems. In 1994, 15 high-volume facilities and 8 facilities with compliance concerns were monitored.

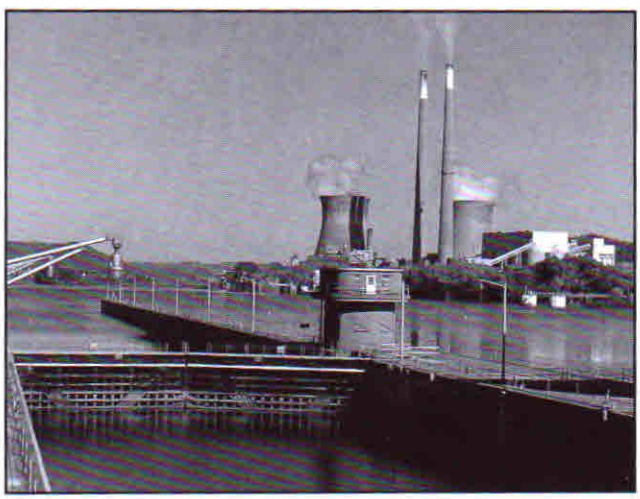
The Compact provides ORSANCO enforcement powers to correct compliance problems. During 1994, the Commission, along with U.S. EPA and Ohio EPA, was involved in administration of consent orders for the Village of Wellsville, Ohio and the Cincinnati Metropolitan Sewer District - Mill Creek Sewage Treatment Plant.

Lisa Hooper, Age 16
Weirton, WV
Brooke High School



Emergency Response

When a spill or accidental discharge to the Ohio River occurs, ORSANCO plays a pivotal role in facilitating communication and coordination among local, state and federal response agencies.



Because the Ohio River is a "working river" – one which is used by industries and utilities for processing and transportation – spills and accidental discharges can and do occur. Any event of this nature has the potential to affect water supplies in several states. This requires coordination of communication and activities among federal, state and local emergency response departments.

Working with Ohio River water utilities and industries, in 1978 the Commission established an Organics Detection System (ODS) to monitor the River daily for the presence of certain chemicals. This system provides added protection of the drinking water supply and enhances the Commission's ability to give prompt notification to downstream water users when a spill occurs. ORSANCO also maintains a 24-hour telephone emergency response system, and posts spill reports on an electronic bulletin board to disseminate information.

Major Spills – 1994

On May 27, 1994, an explosion and fire at a Shell Chemical plant in Belpre, Ohio released several chemicals into Davis Creek near its confluence with the Ohio River. Among chemicals entering the waterway was ethylene dibromide (EDB), a toxic substance used in unleaded gasoline. The Commission, working with other organizations, sampled and monitored the spill as it progressed downstream during the 47-day incident. The spill affected five states and 21 public drinking water facilities. Because of its widespread impact, and the potential to reach a greater area, ORSANCO coordinated several meetings between Shell Chemical and emergency response agencies, and tracked the spill until it dissipated.

Combined Sewer Overflow Initiatives

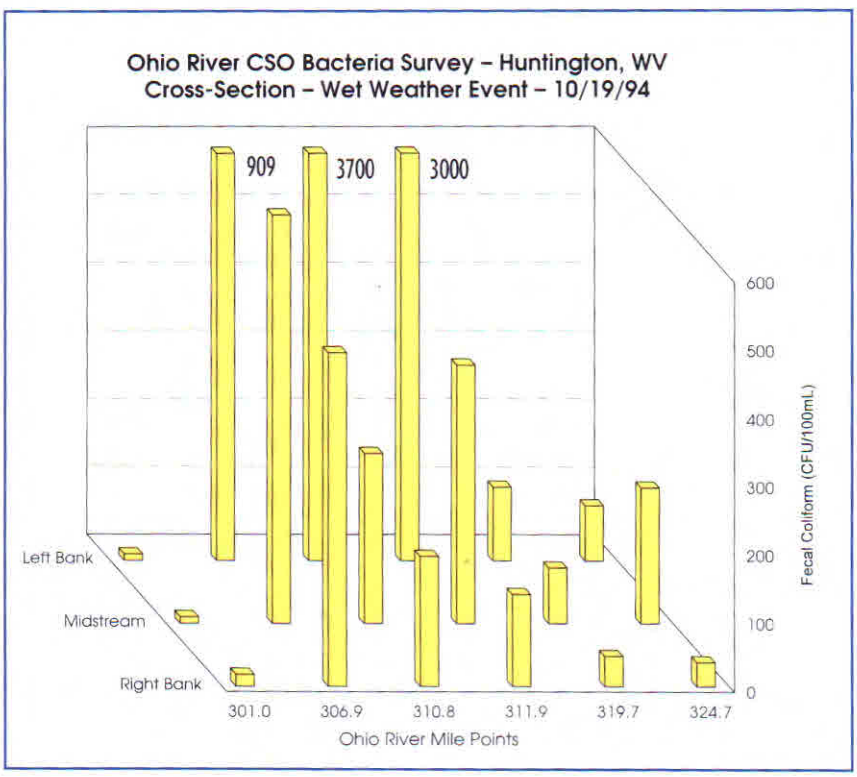
While most waste water discharges in the Ohio River have been controlled, one "point source" of pollution continues to threaten water quality.

Discharges from sewer systems designed to carry both storm and waste water are a major source of pollution in the Ohio River Valley. When water from rainfall or snow melt overloads these combined sewer systems, an overflow may occur, causing a mixture of surface runoff and untreated or inadequately-treated waste water to be released to the waterway.

With more than 1,500 identified combined sewer overflows (CSOs) along or adjacent to the Ohio River, and 75 percent of these clustered in 10 large urban areas, ORSANCO developed an eight-point action list in 1992 to abate pollution from CSOs. Among initiatives set forth for ORSANCO are the review of existing state CSO abatement strategies, development of recommendations for monitoring CSO impacts, and execution of special studies funded by local communities.

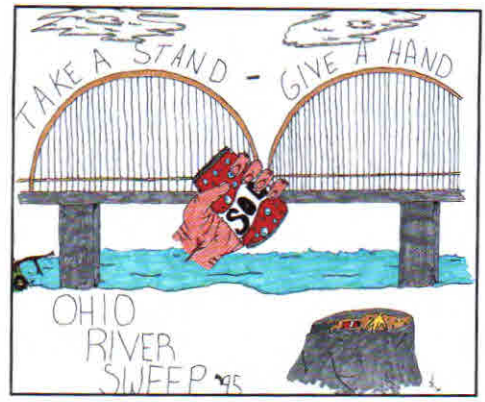
In 1993, ORSANCO adopted a strategy for monitoring overflow influences on the River. Since publication of a U.S. EPA National CSO Policy in April of 1994, the Commission has been working with the main stem states in the development of their respective strategies to assure a consistent approach to CSO abatement along the Ohio River.

During 1994, the Commission sponsored a public symposium in July to discuss CSO monitoring strategies for the Ohio River. In the fall, the Commission completed a study, jointly funded by U.S. EPA Regions III and IV, directed at demonstrating methods to assess CSO impacts on the River. As part of this study, ORSANCO investigated various components of the biological community in the Wheeling, WV area to determine which organisms will be most useful in characterizing impacts. Additionally, a bacteria survey was conducted in Huntington, WV. The figure at the left illustrates bacteria concentrations in a 23-mile section of the River representative of a "wet-weather" event, just upstream and downstream of Huntington. A final report is expected in 1995.



Working with sewer districts serving the Cincinnati and Northern Kentucky area, the Commission has been requested to undertake studies to delineate the impacts of CSO discharges on the Ohio River. This two-year project, with funding from the U.S. EPA, Cincinnati Metropolitan Sewer District, Northern Kentucky Sanitation District #1, and other sources, is expected to serve as a national model for studies elsewhere on large rivers.

Jeremy Sturgeon, Age 15
Union, KY
Larry A. Ryle School



ORSANCO/Ohio River Users Program

The availability of adequate scientific data is crucial to the development of sound water quality regulations and management decisions.

In 1993, the Commission formed a unique partnership with Ohio River Valley industries, utilities and other river users. The ORSANCO/Ohio River Users Program merges financial resources and expertise of the river users with the technical capabilities of ORSANCO to conduct studies that help improve the scientific data base for the Ohio River. Better data will support development of regulations appropriate to actual water quality conditions.

In 1994, the Commission appointed a Program Advisory Committee, consisting of representatives from manufacturing, petrochemical, pharmaceutical, barge, and power industries, and water/waste water utilities, to provide guidance to ORSANCO on the execution of the program. Specifically, the Committee will evaluated possible studies and makes recommendations to the Commission, who will approve and conduct the work.

A first project proposed by the Committee to receive funding through the program was approved by the Commission in May 1994. This project, development of an Ohio River Biological Management Information System, will provide the opportunity for data sharing, with ORSANCO serving as a clearinghouse. The system is expected to be on line in 1995.

ORSANCO/Ohio River Users Program Advisory Committee

Paul H. Loeffelman, Committee Chairman
Manager External Environmental Affairs
American Electric Power Service Corp.

Paul Casaletto
Director Quality Assurance
Operations and Technical Services
Bristol-Myers Squibb Company

Richard S. Engelbrecht, Ph.D.
University of Illinois, Urbana
ORSANCO Commissioner

William M. Kudaroski
Operations Manager-Production
PA-American Water Company
ORSANCO Commissioner

Andrew C. Meko
Vice President Environmental Affairs
Ashland Oil, Inc.

Michael J. Monahan
Manager, Operations, Planning and Control
The Ohio River Company

W. Terry Strange
Environmental & Engineering Manager
Dow Corning Corporation

William C. Trefz
Executive Director
Allegheny County Sanitary Authority

Special Projects and Studies

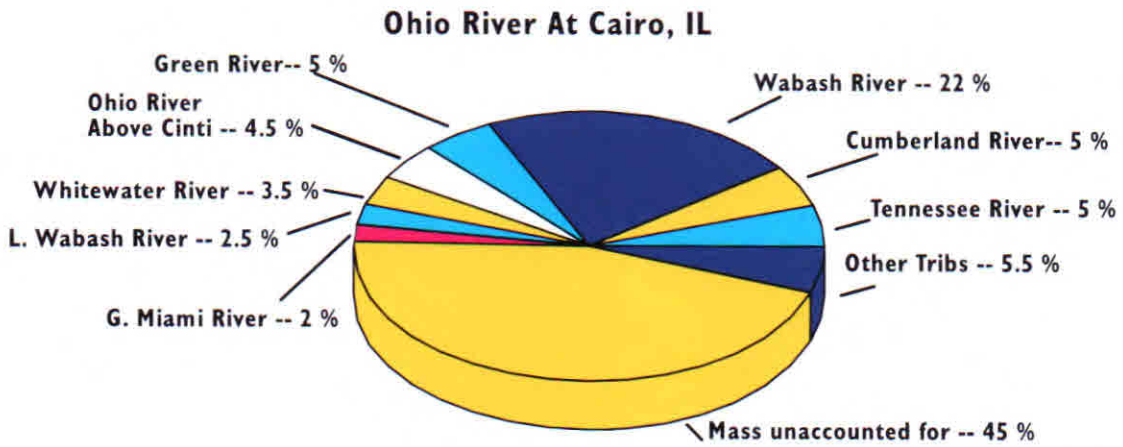
The Commission conducts special investigations and undertakes select projects to help expand understanding of water quality problems in the Ohio River.

Pesticide Survey of the Lower Ohio River and Its Tributaries

To better understand sources of pesticides in the Lower Ohio River, ORSANCO conducted a survey of atrazine levels in June of 1994. Atrazine is a suspected carcinogen that is used in the production of corn, soybeans, wheat, and other crops, and has been detected in some Ohio River public water supply intakes. However, using special treatment, drinking water utilities are able to remove or reduce atrazine concentrations to safe levels for consumption.

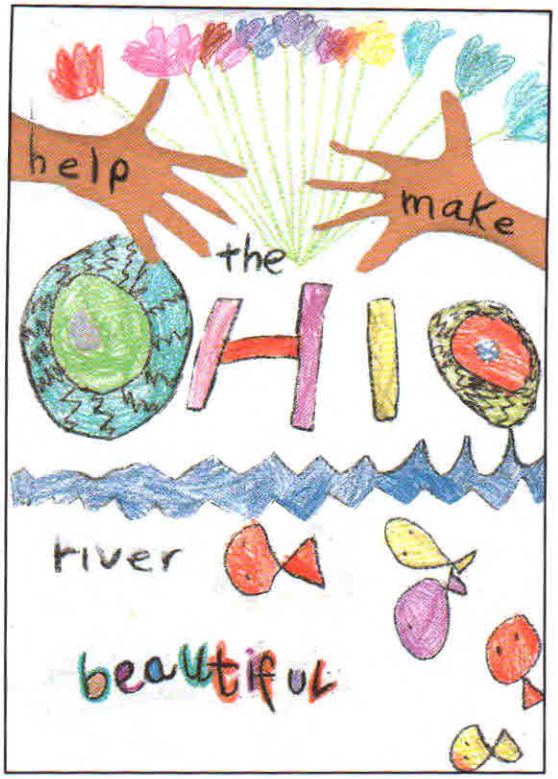
The Commission sampled water from 65 tributaries and 13 Ohio River public water supply intakes from Cincinnati, OH to Cairo, IL. The figure below shows sources of atrazine and their relative contribution to the Ohio River. Some tributaries recorded relatively high levels, and of particular interest is the significant mass (45%) which is unaccounted for. This suggests the need for additional surveys to better pinpoint sources.

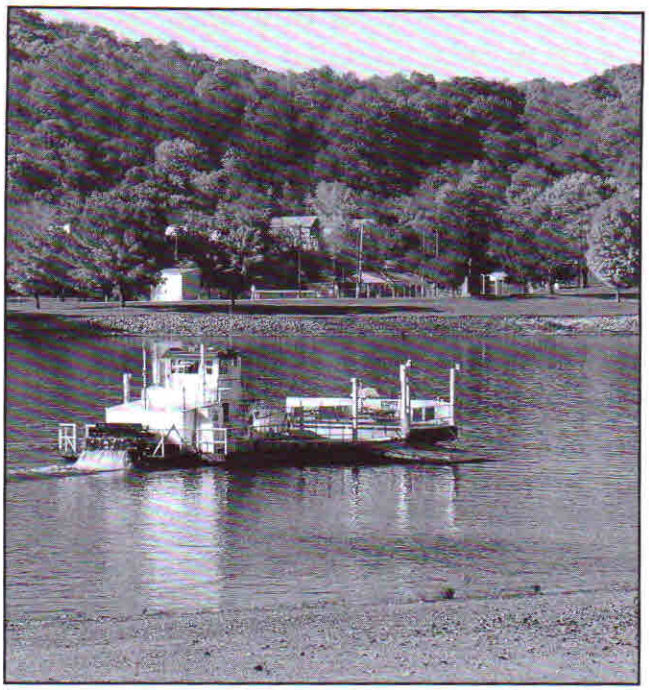
Sources of Atrazine and Their Relative Contribution to the Ohio River



Only the largest 65 tributaries, encompassing more than 1000 miles of shoreline, were sampled.

First Place - Elementary School
Stephanie Werner, Age 7
Forest Park, OH
Cameron Park Elementary School





Survey of the Economic, Cultural and Environmental Value of the Ohio River Corridor

ORSANCO, in cooperation with the National Park Service, Rivers, Trails and Conservation Assistance Program, and the Ohio River Basin Commission, conducted a Valuation Survey of the Ohio River Corridor in 1993. This project focused on readily available information for the 72 counties that border the Ohio River.

As a result of this study, in 1994, the Commission published "What's a River Worth?" -- a booklet that shows the importance of the Ohio River from an economic, cultural and environmental perspective. The report highlights the Corridor's economic importance from power generation, industrial production and transportation, either directly or indirectly dependent on the Ohio River.

River-based cultural and social events and its abundant natural resources draw millions of visitors to the region. Ecologically, many aquatic species dwell in the river, and it supports a variety of threatened and endangered fish, birds and mammals. Copies of the report are available at no charge.

Nonpoint Source Pollution Abatement

Nonpoint source pollution, unlike end-of-pipe discharges, or point sources, enters the water from many origins rather than from one specific site. Resulting from land use activities, it washes contaminants into rivers and streams from parking lots, streets and residential property in cities, from cultivated fields in agricultural areas, and from abandoned mine sites and deforested hillsides.

In the Ohio River Valley, the successful control of most point-source discharges has substantially reduced the amount of certain pollutants flowing into the Ohio River. However, nonpoint source pollution is difficult to locate and, therefore, difficult to control.

In 1993, the Commission appointed a Nonpoint Source Pollution Abatement Task Force, comprised of experts from agencies, industries and public interest groups, to develop a strategy for addressing nonpoint source control. The Task Force continued its work through 1994, and have identified the strategy's general components, including the need for target studies of the Ohio River, definitive identification of the location and nature of existing problems, assessments of contributions from tributaries, coordination of data Valley-wide and public involvement and education.

The strategy is expected to be approved in 1995.

Public Information and Education

Involving the public in river-related issues is an important component of the Commission's Public Information and Education Programs.

By generating interest in the Ohio River through its publications, presentations, conferences and special events, ORSANCO promotes appreciation of this great resource. As people become more aware of the river and related water quality issues, they take an interest and, ultimately, an active role in its stewardship.

The Commission encourages public participation in activities, such as the Ohio River Sweep, a one-day river bank cleanup, and the RiverWatchers Volunteer Monitoring Program, a citizen water quality monitoring effort for the Ohio River and its tributaries.

In 1994, ORSANCO initiated development of a Science Fair Project booklet that can be applied to projects involving the Ohio River and its tributaries. Students in grades 4 through 12 entering local or state Science Fairs will be able to conduct water-related chemical or biological experiments with a focus on Ohio River Valley waterways. This publication will be available in 1995.

1994 Ohio River Sweep Corporate Contributors

American Electric Power
ARCO
Ashland Inc.
BASF
Cincinnati Gas & Electric
Dow Corning
DuPont
Elf Atochem NA
GE Plastics
Heinz
Jantzen
Louisville Gas & Electric
Louisville Propeller Club
Louisville Water Co.
McAlpins
Miles, Inc.
Neville Chemical
North American Stainless
Procter & Gamble
PSI Energy
Wheeling-Pittsburgh Steel

TRASH BAGS
Mobil Chemical

The Ohio River Sweep

The sixth annual Ohio River Sweep, held on June 18, 1994, attracted more than 18,000 volunteers who helped pick up trash from the banks of the river and several tributaries. Volunteers gathered at sites in all 72 counties that border the river and collected over 13,000 tons of debris.

To increase awareness among young citizens of Ohio River litter problems, the Commission sponsored a poster contest in 1994 that was open to all kindergarden through 12th-grade students in counties along the river. From more than 800 entries, judges selected four winning posters -- one grand prize winner, and one first-place winner each from an elementary, middle and high school. The Grand Prize winner received a $1,000 Savings Bond and First Place winners were awarded a $100 bond. Several Awards of Merit were also presented.

As part of the 1994 Sweep, the Commission invited Valley businesses and industries with river front property to sponsor cleanups of their areas in conjunction with the Sweep.

Through its brief history, the Ohio River Sweep has received national recognition, including four national "Take Pride in America" awards from the U.S. Department of Interior, and, most recently, a Community Action Network 1994 Media Award. The Sweep is supported with contributions from Ohio River businesses and industries.

First Place - High School
Jill Benner, 17
Anchorage, KY
Ballard High School

1994-95 Monitoring Groups

Aberdeen Elementary School Sixth Grade Science
Aberdeen, OH

Paul Blazer High School Environmental Club
Ashland, KY

Bruce Middle School Environmental Science
Louisville, KY

Buckeye Local High School Biology Department
Rayland, OH

Evansville Day School Biology Department
Evansville, IN

Highlands Group of the Sierra Club
Ashland, KY

Lawrenceburg High School Biology Department
Lawrenceburg, IN

Massac County High School Environmental Science
Metropolis, IL

Owensboro High School Student Environmental Awareness League (SEAL), Owensboro, KY

Perry Traditional High School Science Department
Pittsburgh, PA

River Ridge Intermediate School Science Classes
Villa Hills, KY

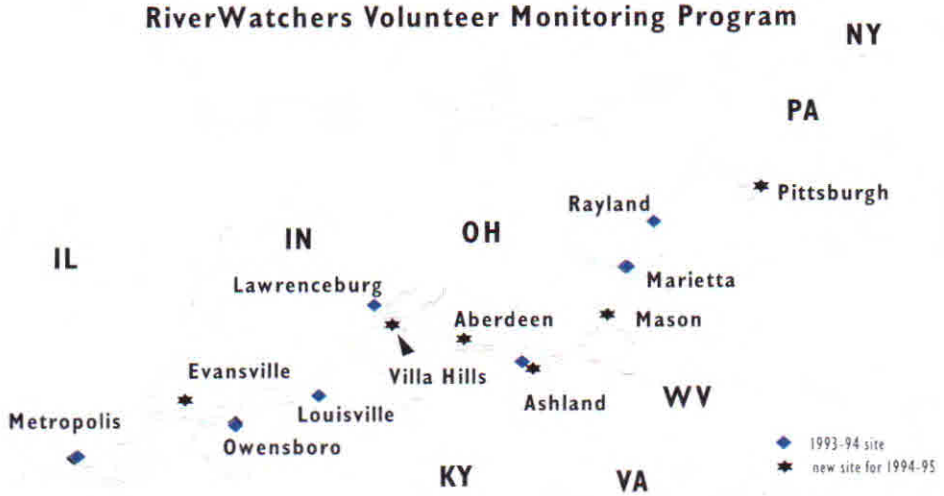
St. Mary's Elementary School Science Department,
Marietta, OH

Wahama High School Earth Science
Mason, WV

Volunteer Monitoring

In 1994, the Commission increased the number of groups participating in its RiverWatchers Volunteer Monitoring Program for the Ohio River and tributaries. Started as a pilot project in 1992 with five organizations collecting and testing water samples in three states, this program for 1994-95 includes 13 groups in five states. From Pittsburgh to Metropolis, Illinois, volunteers test the water monthly for various properties associated with water quality. While all groups conduct chemical tests, some groups also assess the biological communities at their chosen sites.

Sites for 1994 - 95
RiverWatchers Volunteer Monitoring Program



Administrative Year in Review

Officers Elected

In 1994, Ronald R. Potesta of West Virginia was elected chairman and Thomas A. Erlandson of New York was elected vice chairman. Richard Miller of Ohio was elected secretary and Richard L. Herd of the Commission staff was elected treasurer for the period July 1, 1994 through June 30, 1995.

Advisory Committees

The Commission receives advice and counsel from a wide range of viewpoints through its advisory committees. Each represents a particular river-based interest. PIACO, the Public Interest Advisory Committee, is comprised of private citizens from the member states. Public and private utilities that use the river as a source of water supply make up the Water Users Advisory Committee. The Publicly Owned Treatment Works (POTW) Advisory Committee represents waste water treatment departments or districts in the Ohio Valley. Industry advisory committees include those representing power and chemical production. The ORSANCO/ Ohio River Users Program Advisory Committee includes representatives from manufacturing, petrochemicals pharmaceutical, barge, and power industries, and water/waste water utilities.

Publications

Publications are developed to provide information on water quality conditions and activities of the Commission. Charges are levied for some publications to cover production and mailing costs. The charges are waived for requests from educational institutions, government agencies and nonprofit organizations. In 1994, the following publications were produced:

ORSANCO
Annual Report of activities during 1993

RiverWatchers
A newsletter for participants in ORSANCO's volunteer water quality motoring program

Quality Monitor
Semiannual publication of data summaries from the Bimonthly Sampling and Bacteria programs, and the Organics Detection System

Emergency Response Directory
A compilation of instructions concerning the appropriate agencies to notify when a spill or accidental discharge occurs to the Ohio River or a tributary

"What's a River Worth?"
An overview of the role and impact of the river in its economic, cultural, and environmental/natural resource dimensions, using readily available information

Ohio River Fact Book
A compendium of information for use in water quality analysis of the Ohio River

Technical Reports:

Assessment of Water Quality Conditions - Ohio River (1992-93)

Assessment of Water Quality Conditions - Ohio River (1992-93) Executive Summary

Atrazine Survey of the Lower Ohio River and Selected Tributaries

Staff

Donna M. Beatsch, Computer Operator

L. Dane Boggs, Aquatic Biologist

Isabel E. Caputa, Chemist

Erich B. Emery, Environmental Specialist

Karel M. Fraser, Communications Coordinator

James P. Gibson, Jr., Environmental Specialist

Joseph T. Gilligan, Finance Manager

Jason P. Heath, Environmental Engineer

Richard L. Herd, Jr.
Administrative Programs Manager

Barbara A. Horton, Secretary - Technical Programs

Jeanne J. Ison, Public Information Programs Manager

Marilyn P. Kavanaugh, Administrative Assistant

John T. Lyons, P.E., Environmental Engineer

John C. McManus, Environmental Specialist

Jonathan A. McSayles, Analytical Chemist

David K. Plummer, Environmental Engineer

Jerry G. Schulte, Senior Biologist

Peter A. Tennant, P.E., Technical Programs Manager

Alan H. Vicory, Jr., P.E.
Executive Director & Chief Engineer

Regulatory Agencies of the Signatory States

Illinois
Environmental Protection Agency
Division of Water Pollution Control
2200 Churchill Road
Springfield, Illinois 62794

Indiana
Department of Environmental Management
Office of Water Management
Post Office Box 6015
Indianapolis, Indiana 46206-6015

Kentucky
Natural Resources
and Environmental Protection Cabinet
Division of Water Quality
14 Reilly Road
Frankfort, Kentucky 40601

New York
Division of Water
Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-3500

Ohio
Environmental Protection Agency
Division of Water Pollution Control
Post Office Box 1049, 1800 Watermark Drive
Columbus, Ohio 43266-0149

Pennsylvania
Department of Environmental Resources
Bureau of Water Quality Management
Post Office Box 8465
Harrisburg, Pennsylvania 17150-8465

Virginia
Department of Environmental Quality
Post Office Box 10009
Richmond, Virginia 23240

West Virginia
Division of Environmental Protection
Office of Water Resources
1201 Greenbrier Street
Charleston, West Virginia 24311

Financial Report

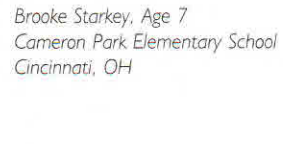
SUMMARY OF RESOURCES AND EXPENDITURES EXTRACTED FROM THE AUDIT REPORT OF ROBERT HALL & ASSOCIATES FOR THE 1994 FISCAL YEAR

RESOURCES

Beginning Balance – July 1, 1993		**$443,838**
State Resources		
Illinois	$44,760	
Indiana	$166,940	
Kentucky	$191,820	
New York	$8,500	
Ohio	$226,900	
Pennsylvania	$124,780	
Virginia	$32,310	
West Virginia	$98,280	
Accounts Receivable – State Funds	$810	
Total State Resources		$895,100
Federal Resources		
U.S. EPA, 106 Water Pollution Control Assistance	$244,339	
U.S. EPA, Area Spills Contingency Planning	$35,011	
U.S. EPA, GIS Demonstration Project	$27,388	
U.S. EPA, Combined Sewer Overflows Investigations	$52,925	
Accounts Receivable – Federal Funds	$139,562	
Total Federal Resources		$499,225
Other Income		
Pennsylvania DER Support of Upper River Study		$311,881
Contributions in Support of the Ohio River Sweep		$134,626
Contributions to the ORSANCO / Ohio River Users Program		$61,500
Contributions for the Ohio River Corridor Economic Study		$12,500
Receipts as a Result of Fines or Settlements		$75,158
Miscellaneous Other Receipts		$36,774
Interest Earned on Deposits		$12,210
Total Resources Available for Programming		**$2,482,812**

On the back cover:

Jaime Mullenix, Age 18
Williamstown, WV
Williamstown High School



Brooke Starkey, Age 7
Cameron Park Elementary School
Cincinnati, OH

Dusty Fuchs, Age 14
Vanderburgh, IN
Helfrich Park Middle School

EXPENDITURES

Basic Water Pollution Control and Abatement Program		$1,236,840
Special Projects		
Upper River Recreational /Aquatic Habitat Study	$389,373	
Ohio River Sweep	$96,041	
Ohio River Corridor Economic Study	$20,425	
Area Spills Contingency Planning	$47,299	
GIS Demonstration Project	$52,209	
Combined Sewer Overflows Investigations	$66,264	
ORSANCO / Ohio River Users Program	$30,763	
Total Special Projects Expenditures		$702,374
Miscellaneous Overhead Expenses		$12,141
Disbursements from Special Account (1)		
Equipment Purchases	$20,483	
Contractual Services	$12,000	
Total Special Account Expenditures		$32,483
Total 1994 Fiscal Year Expenses		**$1,983,838**
Ending Balance - June 30, 1994		**$498,974**

(1)The Commission maintains a Special Account into which fines, settlements or other non-federal funds maybe placed. Disbursements from the account require special Commission authorization.

SUMMARY OF PENSION FUND ACTIVITY EXTRACTED FROM THE ACTUARIAL REPORT OF WILLIAM M. MERCER, INC. FOR THE YEAR ENDING SEPTEMBER 30, 1994

Pension Trust Fund Value - October 1, 1993		**$1,272,596**
Annual Employer Contribution	$29,400	
Fund Earnings and Market Changes	$86,646	
Disbursements for the year	**($64,721)**	
Total Pension Fund Activity		$51,325
Pension Trust Fund Value - September 30, 1994		**$1,323,921**