

ORSANCO

*1999 Annual Report*

# *Prospects for Tomorrow*



*The Ohio River Valley Water Sanitation Commission*

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Vice-Chairman: Vasiliki Keramida  
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Executive Director and Chief Engineer: Alan H. Vicory, Jr.

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Thomas V. Van Auken, Virginia State Water Control Board  
Karl F. Wenger, Ph.D., Virginia State Water Control Board

### *West Virginia*

Michael Castle, Director, Division of Environmental Protection  
Ronald R. Potesta, President, Potesta and Associates

### *Federal*

Robin Corathers, Executive Director, Mill Creek Restoration Project  
Michael McCabe, Regional Administrator, U.S. EPA Region III  
Phillip J. Shepherd, Newberry, Hargrove & Rambicure



*The Ohio River Valley Water Sanitation Commission (ORSANCO) is an interstate water pollution control agency created 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 the approval of the Congress of the United States. The Commissioners of ORSANCO respectfully submit the following report of activities for 1999 to:*

*The Honorable George H. Ryan, Governor of Illinois*

*The Honorable Frank O'Bannon, Governor of Indiana*

*The Honorable Paul E. Patton, Governor of Kentucky*

*The Honorable George Pataki, Governor of New York*

*The Honorable Robert Taft, Governor of Ohio*

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

*The Honorable James S. Gilmore III, Governor of Virginia*

*The Honorable Cecil H. Underwood, Governor of West Virginia*



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

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Ohio River Valley Water Sanitation Commission  
5735 Kellogg Avenue, Cincinnati, OH 45228  
(513) 231-7719  
<http://www.orsanco.org/>

\*Many of the photos displayed in this Annual Report were submitted by amateur photographers who participated in ORSANCO's 1997 Photo Contest. All photographers are credited for their work.

Cover: Photo by Charles Bryant, Meldahl Dam, Chilo, Ohio

## *Message from the Chairman*

### *Forging Partnerships, Meeting Milestones, Searching for Solutions*

*Interstate cooperation is imperative to the future of water quality in this country. ORSANCO continues to be a leader in interstate cooperation, forging partnerships with water pollution control agencies from around the nation, meeting milestones in public outreach and educational efforts, and searching for innovative solutions to water quality issues in the Ohio River Basin.*

#### **Forging Partnerships**

As an interstate agency, ORSANCO has a long history of collaborative partnerships with state and federal agencies in the Ohio River Basin and with local utilities and industries located along the river. 1999 was a year for building upon these existing relationships and for establishing new partnerships with water agencies and organizations across the nation and the globe. In September 1999, ORSANCO became one of 10 signatories to a Declaration of Partnership for the 21st Century. This Declaration, a product of the annual meeting of the Interstate Council on Water Policy, could be the genesis for future partnerships among interstate watershed management organizations, potentially serving as a model for similar collaborative agreements across the country.

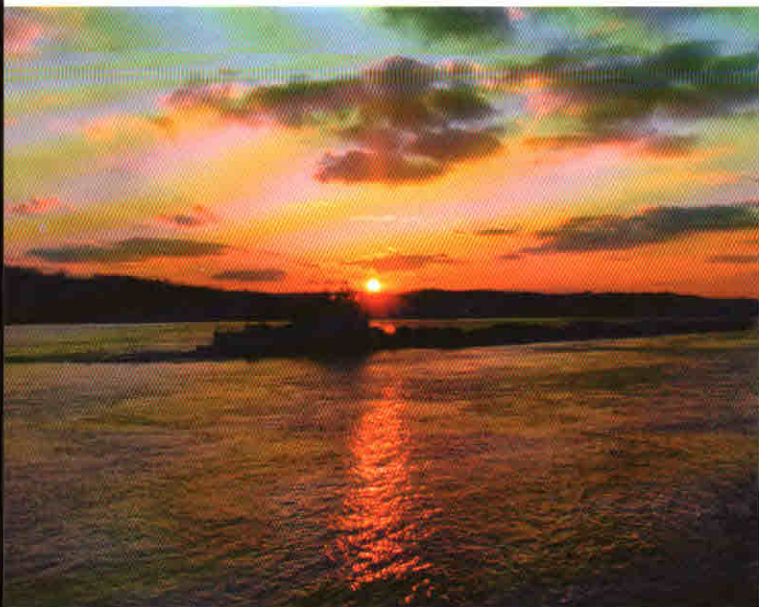
ORSANCO's partnerships in the Gulf of Mexico region were reinforced through continued participation in the investigation of two nutrients, nitrogen and phosphorus, in the Mississippi River Basin. Working on behalf of the six states on the Ohio River main stem, this program will attempt to identify the impact and sources of nutrient loading from the Ohio River subbasin to the Mississippi River, and ultimately to the Gulf of Mexico.

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Finally, expanding our reputation as an international leader in water pollution control, ORSANCO partnered with the U.S. Environmental Protection Agency's (U.S. EPA's) Great Lakes/Baltic Sea Partnership. In October 1999, ORSANCO staff members and U.S. EPA representatives led a Watershed Management Workshop in Jurmala, Latvia. Representatives from Estonia, Latvia, Lithuania, and the Russian Oblast of Kaliningrad attended the sessions. The purpose of the workshop was to develop watershed demonstration projects for the Parnu Basin in Estonia, the Lielupe Basin in Latvia and Lithuania, and the Sesupe Basin in Kaliningrad and Lithuania.

#### **Meeting Milestones**

1999 was certainly a year of milestones for ORSANCO's Public Information and Education Programs. River Sweep celebrated its 10th year as a river-wide clean-up effort on June 19, 1999. Over 23,000 people participated in the River Sweep, cleaning more than 3,000 miles of shoreline on the Ohio River and its tributaries.



*Photo by Charles Bryant, Chilo, Ohio*





*Photo by Marc A. Fox, Clifty Falls State Park, IN*

The RiverWatchers volunteer monitoring program also had a successful year, growing to 37 groups, more than ever before. RiverWatchers teaches student and adult volunteers about the significance of water quality and pollution problems in the Ohio River Valley. In 1999, corporate or community Partners in Education were established for nearly one-third of the RiverWatchers groups.

### *Searching for Solutions*

As a water pollution control agency, ORSANCO strives to find new and innovative solutions to water quality issues. Data developed by ORSANCO are being used by U.S. EPA to formulate a total maximum daily load (TMDL) for dioxin for a portion of the Ohio River. Due to the river-wide

presence of polychlorinated biphenyls (PCBs) and chlordane in fish tissue samples, ORSANCO has been directed to develop the technical components of TMDLs for both of these pollutants in the Ohio River. Results from this study will be submitted to the six states bordering the Ohio River for incorporation into their TMDLs for the two pollutants. ORSANCO is conducting the monitoring, modeling, and pollutant load analyses that are necessary for these TMDLs.

In addition to TMDL development, ORSANCO also coordinates the development of the states' source water programs and insures that they are consistent for all Ohio River drinking water intakes. Through this Source Water Protection Program, ORSANCO is working to define a source water protection area and identify pollution sources.

*I hope that you enjoy reading ORSANCO's 1999 Annual Report, Prospects for Tomorrow. As we enter 2000, ORSANCO will continue to be a leader in watershed pollution reduction: building upon established national and international partnerships; meeting regulatory milestones; and searching for solutions to water quality issues in the Ohio River Valley. All of the initiatives presented here will continue to enhance our mission: To provide cleaner streams in the Ohio River Valley.*

Commission Chairman

*Roy W. Mundy II*



## Forging Partnerships & Searching for Solutions: Supporting State and Federal TMDL Initiatives

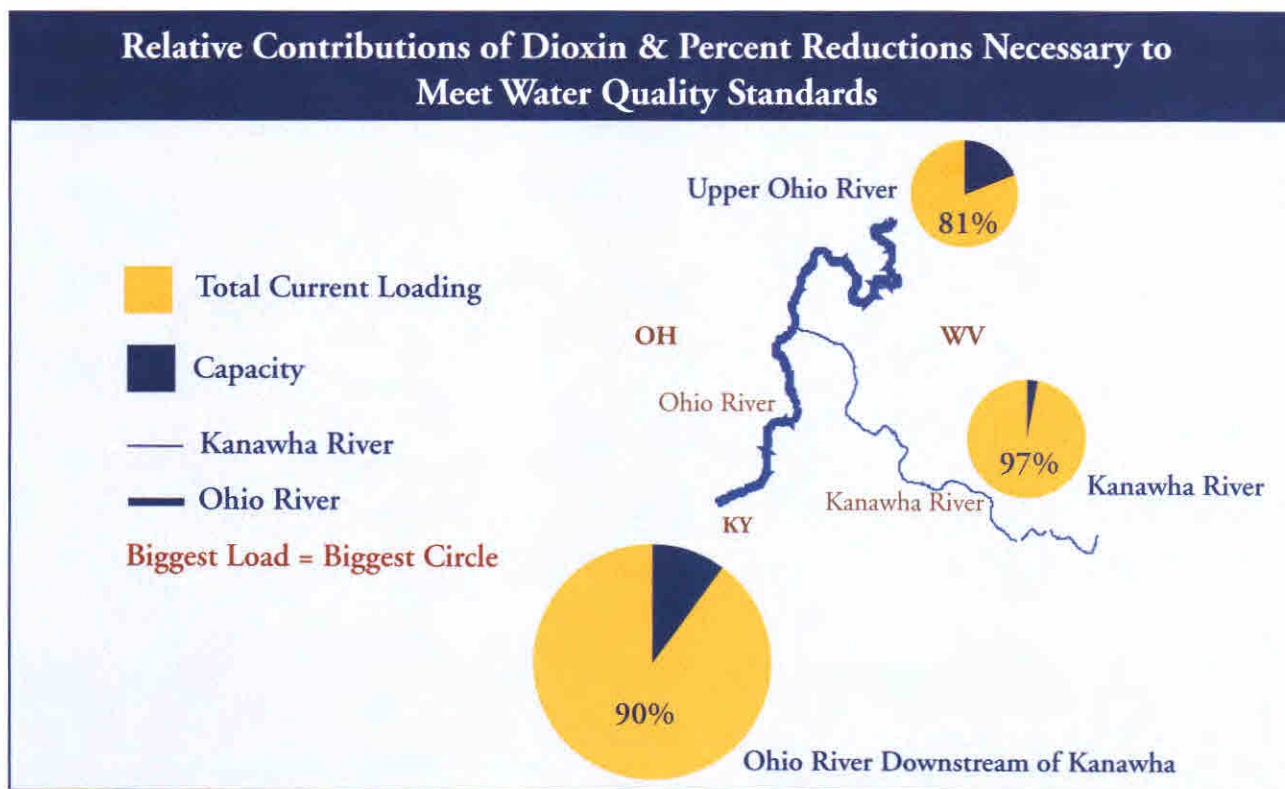
*A total maximum daily load (TMDL) is the maximum amount of a specific pollutant that can be assimilated by a stream without causing impairment or exceeding water quality standards. The TMDL development process includes a number of steps. First, states collect and analyze data to identify impaired water bodies. TMDLs then are developed for these water bodies, and the TMDLs undergo public review and comment. Finally, U.S. EPA approves or disapproves the TMDLs.*

### Total Maximum Daily Loads (TMDLs)

The Federal Clean Water Act requires individual states or U.S. EPA to adopt TMDLs for waters that do not meet water quality standards. ORSANCO provides support to states and the federal government for the development of Ohio River TMDLs in a number of ways, including:

- Standardized monitoring and assessment of the Ohio River.
- Interstate coordination of use impairment assessments.
- Interstate coordination of the identification of Ohio River segments requiring TMDLs.
- Completion of certain technical efforts leading to the development of TMDLs, such as monitoring, modeling, and pollutant loading analyses.
- Interstate coordination of pollutant load allocations in the future.

5 A 1997 Federal Consent Order required the development of TMDLs for dioxin, polychlorinated biphenyls (PCBs), and chlordane for certain portions of the Ohio River along the West Virginia border. ORSANCO is currently completing the monitoring, modeling, and pollutant loading analyses necessary to complete a TMDL for dioxin by September 2000. TMDLs for PCBs and chlordane are required by September 2002.





Through ORSANCO's Ohio River Watershed Pollutant Reduction Program, extensive monitoring and modeling efforts will continue in order to identify and quantify significant sources of dioxin in the upper Ohio River Basin. Computer modeling will help to develop strategies for reducing dioxin loading from these sources. In addition, ORSANCO is currently conducting monitoring and assessment to determine the levels of PCBs and chlordane in the Ohio River. ORSANCO will continue working with the states to complete TMDLs for these pollutants by the 2002 target date.

### ORSANCO's TMDL Activities

#### Identifying Impaired Waters

##### **Federal Requirement:**

- States must compile lists of waters that do not meet water quality standards.

##### **ORSANCO's Response:**

- Monitoring the Ohio River and lower reaches of major tributaries
- Assessing water quality biennially
- Working with states to compile consistent lists of impaired waters

#### Developing TMDLs

##### **Federal Requirement:**

- TMDLs must be designed to meet water quality standards.

##### **ORSANCO's Response:**

- Working with states to develop compatible water quality standards for the Ohio River

##### **Federal Requirement:**

- TMDLs must take into account seasonal variability and assure that water uses are protected under critical conditions.

##### **ORSANCO's Response:**

- Special studies, including monitoring and modeling

##### **Federal Requirement:**

- Public participation

##### **ORSANCO's Response:**

- Convening public workshops to discuss the development of TMDLs, as well as the need for additional TMDLs

##### **Federal Requirement:**

- Pollutant load allocations

##### **ORSANCO's Response:**

- Intensive surveys to identify and quantify sources of pollution

#### *Ohio River Watershed Pollutant Reduction Program*

ORSANCO established the Ohio River Watershed Pollutant Reduction Program to investigate the occurrence of specific pollutants on a watershed basis. The program includes the compilation of existing data and targeted monitoring activities to study the levels of selected pollutants in the Ohio River and its tributaries; the identification of all contributing sources of each pollutant; and the development of control strategies.

Contaminants investigated under this program were selected on the basis of comments received in a series of public workshops. Pollutants currently under investigation are atrazine, chlordane, copper, dioxin, lead, nitrogen, phosphorus, and PCBs. Investigations of these chemicals have been completed, and reports are in preparation. The reports will be presented to the public at another series of workshops.

TMDLs are required for several of the pollutants investigated under this program. In those instances, the information developed by ORSANCO will provide valuable input to efforts by the states and U.S. EPA to develop the TMDLs. In 1999, much of the program's efforts were devoted to supporting TMDL development for dioxin and PCBs.

## Searching for Solutions: Monitoring Water Quality Conditions

For over 50 years, ORSANCO has worked to improve the quality of the waters in the Ohio River Valley, monitoring the rivers and streams on behalf of the states. To assess the effectiveness of pollution abatement efforts, ORSANCO operates water quality monitoring programs, conducts special studies, and surveys conditions of the Ohio River and lower reaches of several major tributaries.

### Bacteria Monitoring

7 ORSANCO works with local health departments throughout the Ohio River Basin, making bacteria data available to better inform the public about water quality. From May through October, ORSANCO monitors the Ohio River five times monthly for bacteria. In addition to this seasonal monitoring, bacteria data is provided by eight water utilities located upstream of urban areas. ORSANCO analyzes water samples for the presence of fecal coliform bacteria downstream from the six largest urban areas on the Ohio (Pittsburgh, Wheeling, Huntington, Cincinnati, Louisville, and Evansville). These locations were selected because bacteria levels may generally be highest, due to the pollution impacts associated with large cities. Samples are also analyzed for *Escherichia coli* bacteria (*E. coli*) at four locations.

During 1999, all six sampling locations recorded exceedances of ORSANCO's bacteria criteria.

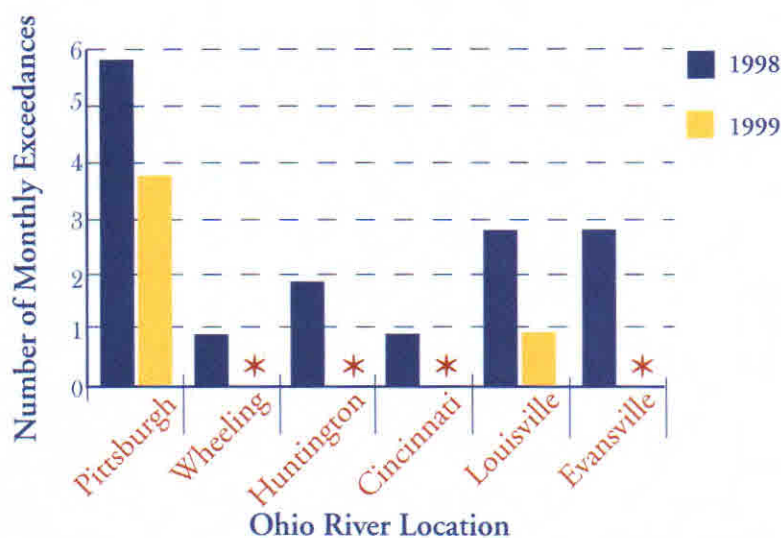
However, all locations demonstrated a reduction in the number of monthly fecal coliform and *E. coli* exceedances from 1998 to 1999. This reduction may be attributed to the unusually dry weather conditions in the Ohio River Basin in 1999, to the successful implementation of combined sewer overflow controls, or to a combination of these factors.

### Dissolved Oxygen Monitoring

Minimum levels of oxygen in the water must be maintained in order to support a healthy aquatic community in the Ohio River. From May through October, ORSANCO receives dissolved oxygen (DO) data, transmitted from electronic monitors at 13 navigational dams operated by the U.S. Army Corps of Engineers (the Corps) or hydropower plants. Through this partnership with the Corps, DO can be improved through changes in the operations of the dams.

Overall, the results of ORSANCO's daily DO monitoring during 1999 demonstrated an increase over 1998 in the number of violations of the daily criterion. This was probably due to unusually hot, dry weather conditions throughout the basin.

Monthly Fecal Coliform Standard Exceedances  
Recreation Season (May-October)  
1998 vs. 1999



\*Note: During 1999, monthly fecal coliform standards were not exceeded in Wheeling, Huntington, Cincinnati, or Evansville.



## Year-Round Bimonthly Sampling

For over 25 years, ORSANCO's year-round bimonthly sampling has provided measurements of inorganic and nutrient parameters at 31 locations along the Ohio River: 17 on the mainstem and 14 on tributaries. This program demonstrates trends in water quality from month to month, and year to year. Results are published semiannually in ORSANCO's Quality Monitor.

Results for 1999 generally indicate good water quality at most sites. Occasional exceedances of cadmium and lead criteria were detected at several locations, and the phenolics criterion for the prevention of taste and odor for public water supplies was violated at several locations.

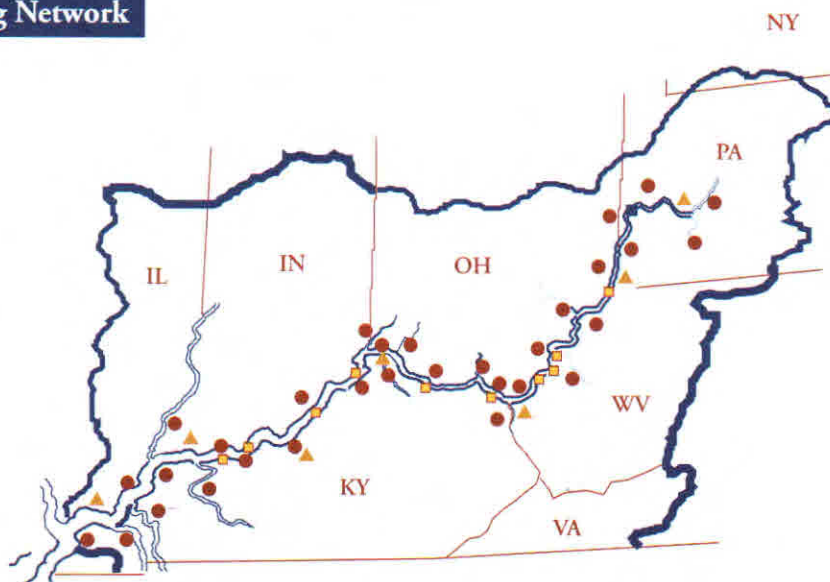
### ORSANCO Water Quality Monitoring Network

#### Seasonal Monitoring for:

● Bacteria

▲ Dissolved Oxygen

■ Year-Round Bimonthly Sampling



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## Organics Detection System

In 1977, water utilities along the Ohio River requested assistance from ORSANCO with the development of an Organics Detection System (ODS) to protect drinking water supplies from unreported chemical spills. Since then, the ODS has served as ORSANCO's primary mechanism for protecting Ohio River Valley citizens from the presence of certain organic compounds at water utilities. The system is supported through the cooperation of 15 utilities and industries. ORSANCO continually strives to incorporate new technologies to maintain and enhance the ODS network's capabilities. During 1999, improvements were made in capabilities for data collection, manipulation, and transmission.

## Spills Notification

For over 30 years, ORSANCO has worked to assure that water utilities are sufficiently warned about upstream spills. In 1999, 394 reports of spill incidents and unknown discharges were received. All but two of these reports were minor and posed no threat to public water intakes.

On January 24, 1999, ORSANCO responded to a fuel spill into the Ohio River near Louisville, Kentucky, providing technical assistance with instream monitoring, sample collection, and analysis at ODS stations located at Louisville and Evansville water works. On August 9, 1999, ORSANCO's assistance was requested when a towboat collided with a barge carrying over a million gallons of cumene near Mt. Vernon, Indiana. ORSANCO responded, providing instream monitoring and informing downstream water utilities.

## Meeting Milestones:

### Pollution Sensitive Fish Return to the Ohio

To better understand the Ohio River's biological community, ORSANCO conducts fish population studies. These studies provide valuable information about how biological communities respond to both natural and man-made environmental and water quality conditions. ORSANCO uses the electrofishing method to collect fish, then weighs, measures, and classifies fish by species, returning them to the water unharmed.

#### Fish Population Update

Over the past five decades, the water quality of the Ohio River has steadily improved. As a result, the health of the biological communities supported by the river has improved, and the number of fish species that make the river their home has increased.



Blue Sucker  
(*Cycoreptus elongatus*)



Paddlefish  
(*Polyodon spathula*)

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Over 120 species of fish have been collected from the Ohio River since 1957. ORSANCO has documented an increase in numbers for two species of fish: Paddlefish (*Polyodon spathula*) and blue suckers (*Cycoreptus elongatus*). Both of these fish species are relatively sensitive to environmental disturbances, and at one time it was extremely difficult to find either species in the Ohio. Today, paddlefish are widespread and large schools can be seen feeding near the water's surface. In the past, blue suckers were observed in the Ohio, but 1999 marked the first time ORSANCO collected blue suckers using electrofishing methods.

#### Fish Contaminants and Consumption Advisory Program

ORSANCO collects tissue samples from selected fish species and analyzes them for the presence of certain chemicals that can be harmful to humans who may eat these fish. Results from analyses are reported to the environmental and health agencies bordering the Ohio River. Based on these data, states issue fish consumption advisories, providing recommendations about the amount of fish that can safely be consumed, particularly by children and women of child-bearing years. ORSANCO works closely with the states to provide consistency on advisories.

During 1999, all six states bordering the Ohio River issued fish consumption advisories. In general, these advisories warn against consuming bottom-feeding fish like carp and channel catfish. Sport fish like sauger and white crappie are typically not restricted.

#### State Agencies Issuing Fish Consumption Advisories

##### Illinois

Illinois Environmental  
Protection Agency  
Office of Chemical Safety  
(217) 785-0830

Illinois Department of Public Health  
Division of Food, Drugs, and Dairies  
(217) 785-2439

Illinois Department of Natural Resources  
Division of Fisheries  
(217) 782-6424

##### Indiana

State Department of Health  
Environmental Epidemiology Section  
(317) 233-7207

##### Kentucky

Natural Resources & Environmental  
Protection Cabinet  
Division of Water  
(502) 564-3596

##### Ohio

Ohio Department of Health  
Bureau of Environmental  
Health & Toxicology  
(614) 644-6447

##### Pennsylvania

Division of Assessment & Standards  
Bureau of Water Quality Management  
PA Department of  
Environmental Protection  
(717) 787-9637

##### West Virginia

West Virginia Department of  
Environmental Protection  
(304) 759-0515



## *Forging Partnerships:* *Expanding Interstate & International Collaboration*

*Throughout the year, ORSANCO broadened its international reputation for river basin approaches to pollution control and abatement. Serving as a model on river basin management, ORSANCO provides consultation on water quality issues to several world regions.*

### **Declaration of Partnership for the 21st Century**

In September 1999, ORSANCO became a signatory to the Declaration of Partnership for the 21st Century with nine other interstate water management organizations at a meeting of the Interstate Council on Water Policy. With this Declaration, signatories agreed to work together to further the development of watershed-based approaches to watershed management. Signatory organizations will develop a network for information sharing and coordination; collaborate on special projects and studies that impact multiple jurisdictions; and develop and recommend water resource policies on issues of a regional, national, and international nature.

#### **Signatory Organizations to the Declaration of Partnership for the 21st Century**

Delaware River Basin Commission	New England Interstate Water Pollution Control Commission
Great Lakes Commission	Ohio River Basin Commission
Interstate Commission on Potomac River Basin	Ohio River Valley Water Sanitation Commission
Interstate Council on Water Policy	Susquehanna River Basin Commission
Interstate Sanitation Commission	Upper Mississippi River Basin Commission

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### **Great Lakes/Baltic Sea Partnership**

The Great Lakes/Baltic Sea Partnership fosters information and resource sharing in order to reduce environmental and human health risks in the Great Lakes and Baltic Sea Regions. The purpose of the Partnership's Watershed Management Capacity-Building project is to assist Baltic states with enhancing their transboundary watershed management capabilities, a requirement for gaining membership in the European Union.

A Great Lakes/Baltic Sea Partnership workshop took place in Jurmala, Latvia in 1999. The purpose of the workshop was to develop watershed demonstration projects for the Parnu Basin in Estonia, Lielupe Basin in Latvia and Lithuania, and the Sesupe Basin in Kaliningrad and Lithuania. Three collaborative projects involving modeling, database management, and geographic information systems (GIS) were developed. Representatives from Estonia, Latvia, Lithuania, and the Russian Oblast of Kaliningrad attended workshop sessions.

As part of the Partnership, a Research Fellow from Kaunas University in Lithuania joined ORSANCO's staff for a six-month stay, beginning in February 2000. Dr. Violeta Vincevicene will work on watershed management issues common to the Nemanas River in the Baltic Region and the Ohio River. Additionally, representatives from the Baltic region will travel to Cincinnati, Ohio for a technology workshop in May 2000.



*Lielupe River, Riga, Latvia*



## Forging Partnerships and Searching for Solutions: Special Programs Provide Valuable Information

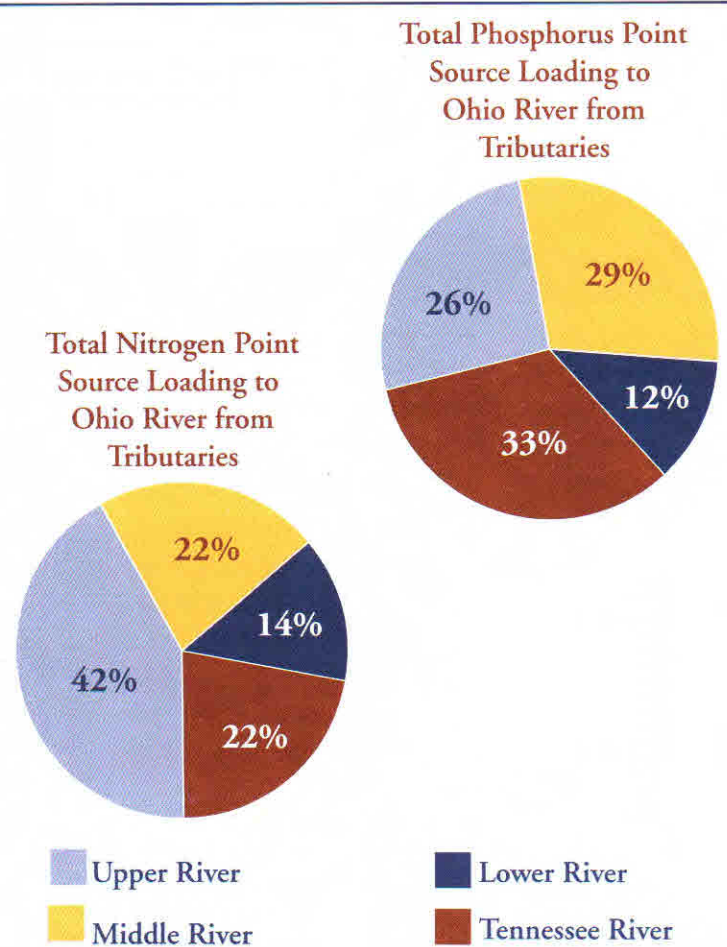
*In addition to its ongoing water pollution control programs, ORSANCO conducts special projects and studies to further examine Ohio River water quality. Currently, these studies include a Nutrients Program and a Source Water Assessment Program. During 1999, ORSANCO continued efforts to implement these special programs to strengthen public understanding of and management efforts for the Ohio River.*

### Nutrients Program

In order to address an emerging concern in the Gulf of Mexico, an area of low dissolved oxygen (hypoxia) possibly caused by excessive nutrient levels, ORSANCO initiated an investigation of two nutrients, nitrogen and phosphorus, in the Ohio River Basin. The program's purpose is to identify the impact and sources of nutrient loading from the Ohio River subbasin to the Mississippi River, and ultimately to the Gulf of Mexico. Estimates also will be made of nutrient contributions by point and non-point sources within the Ohio River subbasin. ORSANCO represents Ohio River states in this collaborative program.

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Nutrient monitoring was conducted from March 1998 to February 1999 at 16 locations. Results demonstrated that total nitrogen and total phosphorus loading increased in a downstream direction. Investigations show that the Ohio River Basin contributes 43.4% of the total nitrogen loading, and 42.6% of the total phosphorus loading to the Gulf of Mexico, factoring in the Tennessee River Basin. The Wabash, Tennessee, Cumberland, and Scioto Rivers contribute the greatest tributary loading of total nitrogen to the Ohio, while the Wabash, Tennessee, and Cumberland Rivers contribute the greatest tributary loading of total phosphorus.



### Source Water Assessment

The Ohio River is used as a source of drinking water for over three million people. Protection against threats to the health of those people through contamination of their water supply is ORSANCO's number one priority. In 1999, ORSANCO worked with state water supply agencies and U.S. EPA to improve protection of Ohio River public water supplies through the implementation of the Federal Source Water Assessment Program.

Under the 1996 amendments to the Federal Safe Drinking Water Act, each state is required to develop a source water assessment program that will ultimately lead to source water protection plans for public water supplies. Each of the states





along the Ohio River has developed its source water assessment program. In order to provide a consistent level of protection for water utilities on the Ohio River, ORSANCO worked with the states to develop a common approach to the delineation of protection areas and the identification of potential threats. Because the protection areas for Ohio River utilities usually lie in more than one state, ORSANCO will carry out several additional tasks in this program on behalf of the states.

### *ORSANCO/Ohio River Users Program*

*Photo by Linda Zwick, Rising Sun, Indiana*

The ORSANCO/Ohio River Users Program is a cooperative effort between ORSANCO and Ohio River industries, utilities, and municipalities. The program was initiated in 1993 to make scientific studies possible, the results of which will improve the basis for decisions about Ohio River water quality issues. Studies conducted by the ORSANCO/Ohio River Users Program are made possible through contributions of river-based industries and water utility companies.

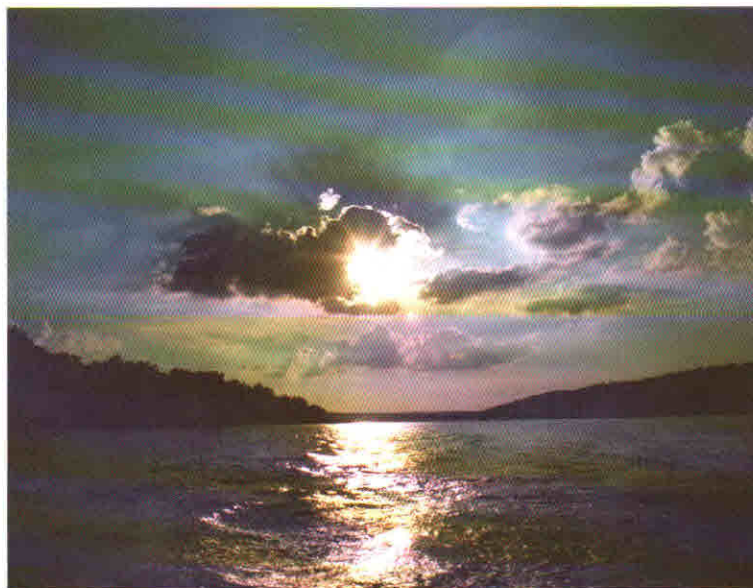
The ORSANCO/Ohio River Users Program had a successful 1999. Three studies were completed and approved by Commissioners: Evaluation and Recommendation of Water Quality Models for the Ohio River; Guidelines for Determining Instream Water Quality Conditions; and Guidelines for Delineating Mixing Zones for Ohio River Discharges. Each study is dedicated to improving the scientific basis for water quality decisions on an inter-jurisdictional water body, and will help states develop permitting criteria that follow consistent procedures.

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A fourth study, titled Trend Analysis of Ohio River Fish, was initiated in 1999. Information on water chemistry, flow, and dam construction is being reviewed in order to identify factors that influence Ohio River fish populations.

### *EMPACT*

In 1999, ORSANCO continued working with U.S. EPA in a nationwide project to provide citizens with current environmental information. The Environmental Monitoring for Public Access and Community Tracking (EMPACT) project, allows the public to make more informed day-to-day decisions about their health and the environment. Through the EMPACT program, ORSANCO provides the general public with timely water quality information that is easy to use and understand. This information informs citizens about the impact of water quality on recreational uses of the Ohio River. During 1999, ORSANCO produced an Internet web site, providing access to on-line geographic information systems (GIS) maps, simulations, tutorials, and links to other information sources.



*Photo by Elizabeth Chrissen, New Richmond, Ohio*



## Meeting Milestones:

### Another Successful Year for Public Information Programs

*ORSANCO has long recognized the importance of informing and educating the public about Ohio River Valley issues and has focused much attention on involving citizens in river related activities. A number of ORSANCO's programs, including the River Sweep and RiverWatchers, invite the public to become stewards of their local waterways. Throughout the years, these on-going programs have drawn thousands of people to the Ohio River and its tributaries.*

## River Sweep 2000

River Sweep 1999 was held on Saturday, June 19, marking the 10th anniversary of this event river-wide. Nearly 23,000 people participated, removing over 9,000 tons of trash from the banks of the Ohio River and some of its tributaries. Over the years, this nationally recognized event has improved the visual beauty of Ohio River Valley waterways, and has helped to change public opinion regarding water quality in our rivers and streams.

In addition to the Sweep, ORSANCO continued the annual River Sweep Poster Contest to promote public awareness. Completed in December 1999, the 2000 River Sweep Poster Contest was a huge success, receiving nearly 3,000 entries. Fourth grader Jamar Huff from Cameron Park Elementary in Cincinnati, Ohio was selected as the River Sweep Poster Contest Grand Prize Winner. Jamar's artwork will be displayed on posters and brochures promoting River Sweep 2000, scheduled for Saturday, June 17, 2000.

The River Sweep owes its success to cooperative efforts among the state agencies who help coordinate this event, to the thousands of volunteers who participate annually, to the generous financial support of corporate sponsors, and to the countless hours devoted by county coordinators.



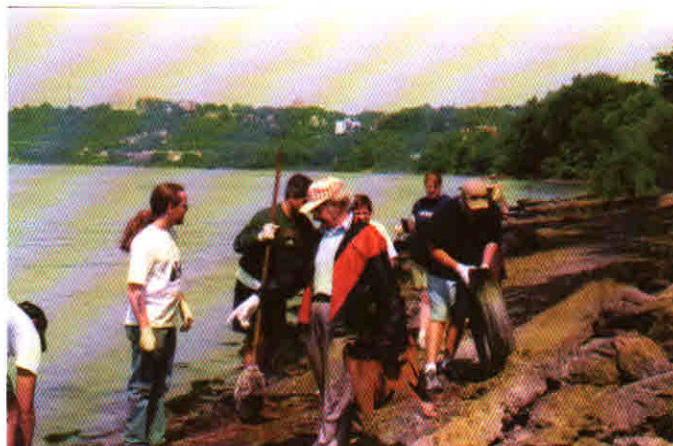
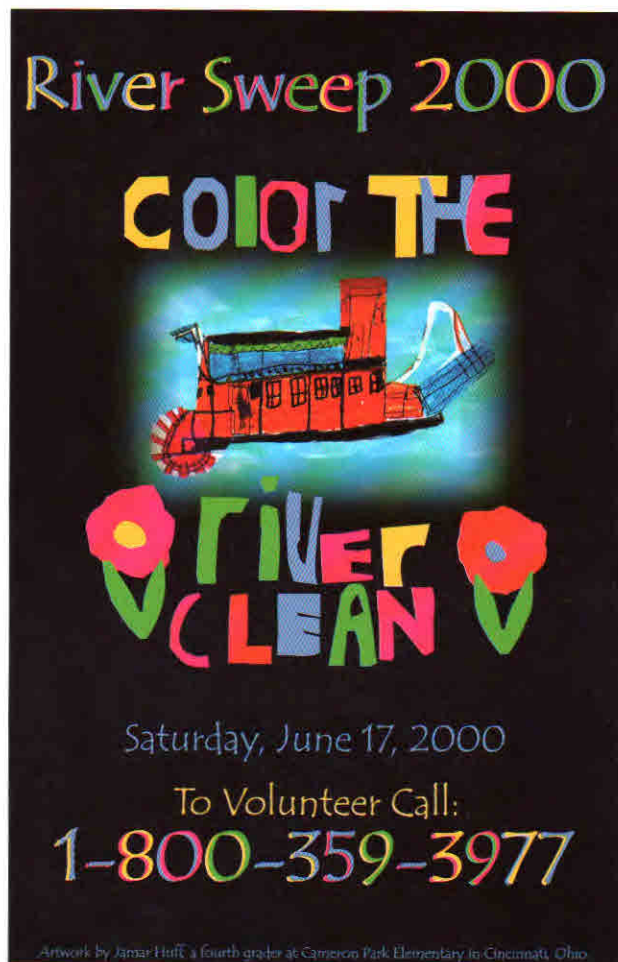
*Jamar Huff*

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### 1999 River Sweep Corporate Sponsors

AEP River Transportation	Bristol-Myers Squibb	Grand Victoria Casino	NOVA Chemical
AK Steel	Cinergy	Koppers Industries, Inc.	Pennsylvania Coal Association
Allegheny Ludlum	Dow Corning	LAIMA	Procter & Gamble
Allegheny Power	DuPont	Louisville Gas & Electric	Seagram
American Electric Power	Duquesne Light	Louisville Water Company	SIGECO
ARCH Chemical	Elf AtoChem NA	LTV Steel	Toyota
Ashland Inc.	Elkem Metals	Marathon Ashland	U.S. Steel
BASF	Exxon	Neville Chemical	Weirton Steel
Bayer	GE Plastics	Newport Aquarium	
BFI	Gallatin Steel	North American Stainless	





*River Sweep volunteers in Cincinnati, Ohio*



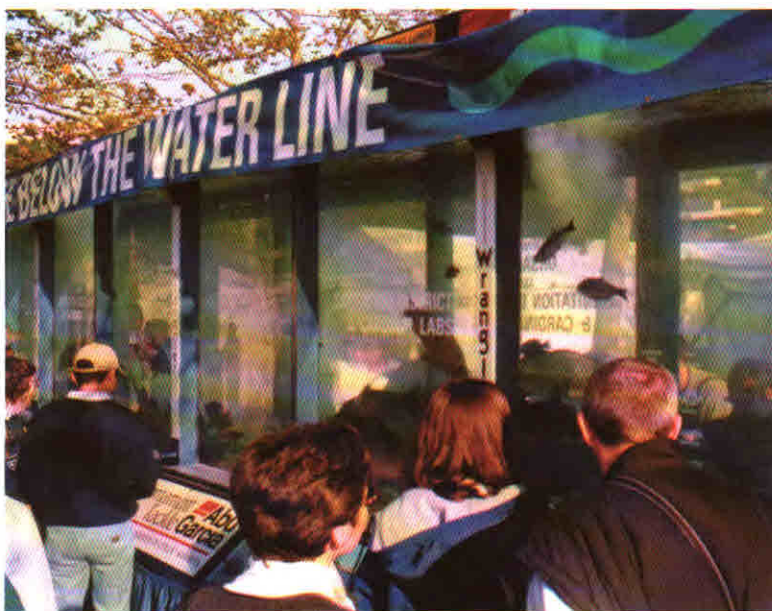
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## Tall Stacks

Every four years, the banks of the Ohio River at Cincinnati, Ohio are graced with tributes to the past at Tall Stacks. This riverfront festival features paddlewheelers from centuries past, and culminates in riverboat races, fostering a carnival-like atmosphere.

In 1999, ORSANCO staff participated in Tall Stacks, demonstrating the health of the Ohio River with a 6,000 gallon fresh water aquarium. This aquarium showcased 30 species of river fish, collected for the event and later released back into the river. The aquarium was sponsored by ORSANCO, Sanitation District No. 1 of Northern Kentucky, and Cardinal Laboratories.

*Life Below the Water Line, Cincinnati, Ohio*







Since 1992, ORSANCO has continued to promote stewardship of Ohio River Valley waterways through the RiverWatchers volunteer monitoring program. In 1999, the program expanded to 37 groups testing their communities' water quality on the Ohio River and six of its tributaries. The success of the RiverWatchers program is greatly enhanced by the support of Partners in Education from various corporations and organizations who provide assistance with water quality testing and data analysis. As of December 1999, nearly one-third of RiverWatchers groups were paired with Partners in Education.



*Students from Warwood  
Middle School in  
Wheeling, West Virginia*



*Students from St. Francis  
Xavier School in  
Moundsville, West Virginia*

## 1999-2000 RiverWatchers & Their Partners in Education

Dickson Intermediate School, Pittsburgh, PA

Partner in Education: Jack Mautino, Wilkinsburg-Penn Joint Water Authority  
Fairfield West School, Fairfield, OH

Partner in Education: Tom Bokeno, Champion Paper  
Good Shepherd School, Evansville, IN

Partner in Education: Dave Stuckey, Mead Johnson  
Raceland-Worthington School, Worthington, KY

Partner in Education: Richard Beihle, Ashland Inc.  
Sacred Heart of Mary School, Weirton, WV

Partner in Education: Miya Rock, Bayer Corporation  
Southwestern Junior-Senior High School, Hanover, IN

Partner in Education: Paul deLamerens, Indiana-Kentucky Electric Power Company  
St. Francis Xavier School, Moundsville, WV

Partner in Education: Roger Frame, Bayer Corporation  
St. Michael School, Wheeling, WV

Partner in Education: Tom Conti, Bayer Corporation  
Taylor High School, North Bend, OH

Partner in Education: Duane Day, Ron McAdams, Bayer Corporation  
Walnut Hills High School, Cincinnati, OH

Partner in Education: Kerri Buhrlage, Cinergy Corporation



## ORSANCO RiverWatchers Groups



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## ORSANCO RiverWatchers Groups

1. Perry Traditional Academy, Pittsburgh, PA  
Dickson Intermediate School, Pittsburgh, PA
2. Sacred Heart of Mary School, Weirton, WV
3. Warwood Middle School, Wheeling, WV
4. St. Michael School, Wheeling, WV  
St. Francis Xavier School, Moundsville, WV  
Magnolia High School, New Martinsville, WV
5. Marietta Middle School, Marietta, OH  
Marietta High School, Marietta, OH
6. Vandevender Junior High, Parkersburg, WV
7. Wahama High School, Mason, WV
8. Chesapeake Middle School, Chesapeake, OH
9. Raceland-Worthington School, Worthington, KY
10. Augusta High School, Augusta, KY
11. New Richmond High School, New Richmond, OH  
Monroe Elementary, New Richmond, OH
12. Loveland Hurst Middle School, Loveland, OH
13. Tall Stacks Education Project, Cincinnati, OH  
Walnut Hills High School, Cincinnati, OH  
Clark Montessori, Cincinnati, OH
14. Bishop Brossart High School, Alexandria, KY
15. River Ridge Intermediate School, Villa Hills, KY
16. Taylor High School, North Bend, OH  
Elizabethtown Elementary, North Bend, OH
17. Fairfield West Elementary, Fairfield, OH
18. Lawrenceburg High School, Lawrenceburg, IN
19. Switzerland County High School, Vevay, IN
20. Madison High School, Madison, IN
21. Southwestern Junior-Senior High School, Hanover, IN
22. Hancock County Middle School, Lewisport, KY
23. Daviess County Middle School, Owensboro, KY
24. French Island Marina, Rockport, IN
25. Mater Dei High School, Evansville, IN  
Evansville Day School, Evansville, IN  
Good Shepherd School, Evansville, IN
26. Massac County High School, Metropolis, IL
27. Cairo High School, Cairo, IL

## *Searching for Solutions:*

### *Drought Prevents Completion of Wet Weather Studies*

*Water quality conditions in the Ohio River have improved over the years as treatment has been provided to waste water discharges. In dry weather conditions, concentrations of most water quality parameters are within acceptable levels. In wet weather conditions, however, large quantities of pollutants are discharged to the river through overflows from combined sewer systems and from direct runoff. ORSANCO has undertaken a series of studies to better understand the wet weather pollution problems in urban areas along the Ohio River and to evaluate potential solutions to those problems. ORSANCO's Wet Weather studies are conducted in cooperation with local water and waste water utilities.*

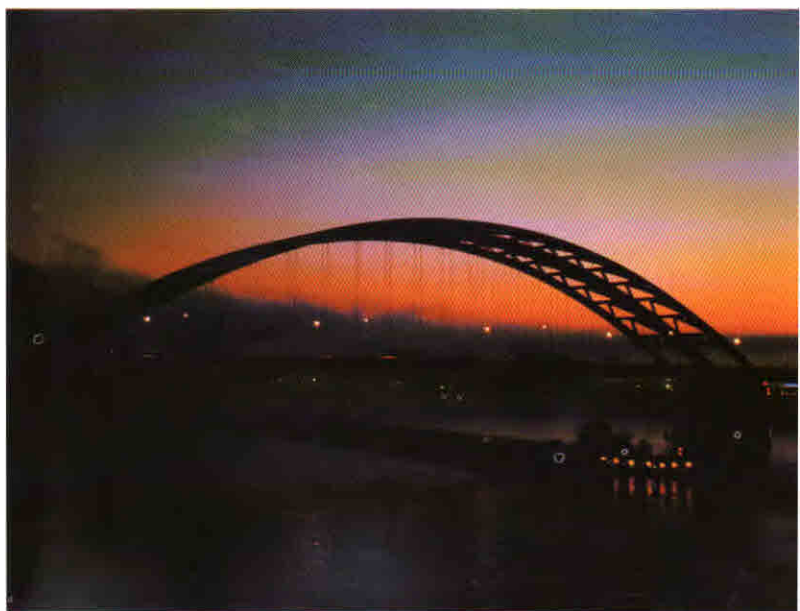
#### **Cincinnati**

In 1995, ORSANCO initiated a multi-year wet weather study in the Cincinnati/Northern Kentucky area. The study is supported by the Metropolitan Sewer District (MSD) of Greater Cincinnati; Sanitation District No.1 of Northern Kentucky; and the Cincinnati Water Works. Due to the study's significance as a demonstration project for urban wet weather problems on large rivers, support was also provided by U.S. EPA.

- 17 The study involves intensive sampling of the river under both dry and wet weather conditions. Results of this sampling will be used to develop a model of the study area that can be used to evaluate alternative controls of wet weather pollution sources. The study's objective for 1999 was to complete two wet weather sampling events in order to finalize the development of the model, allowing the study to conclude in early 2000. Due to unusually dry weather conditions, however, only one wet weather sampling event was completed.



*Photo by Arthur Averbeck, Suspension Bridge, Cincinnati, Ohio*



*Photo by Julius R. Ricks, L&N Bridge, Cincinnati, Ohio*

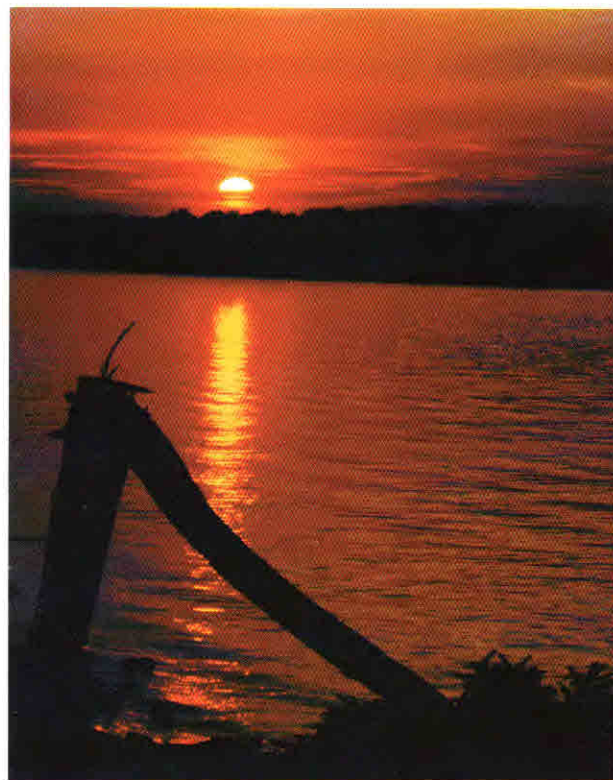


## *Louisville*

The Louisville Wet Weather Study is being conducted in cooperation with U.S. EPA; Louisville Metropolitan Sewer District; Louisville Water Company; the City of Louisville, Kentucky; and the cities of Jeffersonville, Clarksville, and New Albany, Indiana. This study began in 1997 and was designed to utilize approaches developed during the Cincinnati study.

Dry weather sampling for this study was completed in 1999. As was the case with Cincinnati, drought conditions precluded the execution of wet weather sampling. Other activities, including a dye study, were carried out in order to facilitate further development of a model for the study area. In order for the study to proceed, wet weather sampling will need to be completed in 2000.

*Photo by Ken Vogler, Louisville, Kentucky*



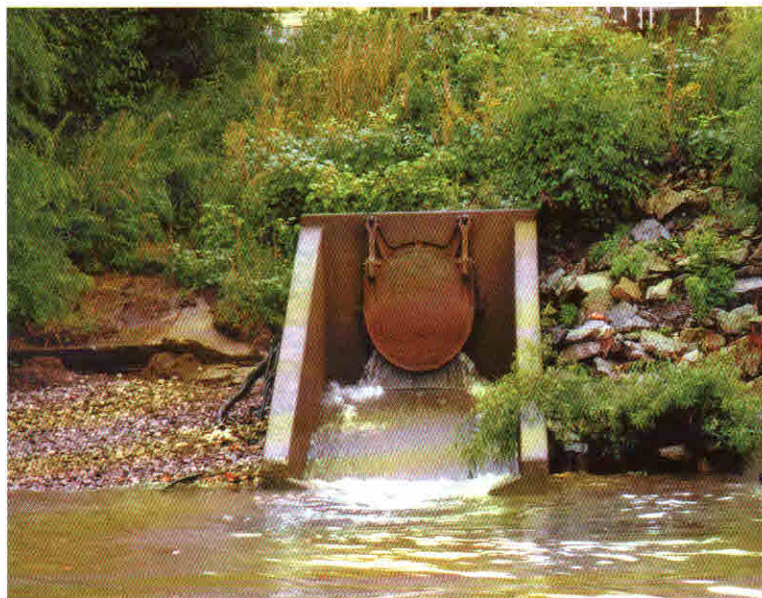
## *Hannibal Pool (Wheeling Area)*

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The Hannibal Pool Wet Weather Study was undertaken to evaluate the impacts of urban wet weather pollution sources in the Wheeling, West Virginia area, as well as the effects of acid mine drainage on tributaries. Study participants include Wheeling Water Pollution Control Department; Eastern Ohio Regional Wastewater Authority; the cities of McMechen, Moundsville, and New Martinsville, West Virginia; the Village of Powhatan Point, Ohio; U.S. EPA Region III (Wheeling office); West Virginia Department of Environmental Protection; and Ohio EPA. Funding was provided by the Virginia Environmental Endowment.

The study was initiated in 1998. In 1999, river sampling was completed and a year one report was prepared. Results showed elevated bacteria levels in some tributaries under both dry and wet weather conditions. In the Ohio River study area, dry weather bacteria levels were acceptable, but elevated levels were found under wet weather conditions.

The study will continue in 2000 with additional dry and wet weather sampling, and the study area will be expanded to include the upstream (Pike Island) navigation pool.



*One of many Combined Sewer Overflows along the Ohio River.*

**Ohio River Valley Water Sanitation Commission**  
**Combined Balance Sheet \***  
**All Fund Types and Account Groups**  
**June 30, 1999**

	Governmental Fund Types		Fiduciary Fund Type	Account Groups		Total (Memorandum Only)
	General Fund	Special Revenue Funds	Pension Trust Fund	General Fixed Assets	General Long-Term Debt	
<b>Assets</b>						
Cash	\$261,043	\$ 122,953	\$ 86,545	\$	\$	\$ 470,541
Restricted investments			1,740,911			1,740,911
Accounts receivable:						
Due from the Federal Government		926,683				926,683
Other receivables	720		14,553			15,273
Due from other funds	653,466		70,000			723,466
Prepaid expenditures	1,372					1,372
Property and equipment				1,699,263		1,699,263
Amount to be provided for retirement of long-term debt in future years					1,051,733	1,051,733
	<u>\$916,601</u>	<u>\$ 1,049,636</u>	<u>\$ 1,912,009</u>	<u>\$ 1,699,263</u>	<u>\$ 1,051,733</u>	<u>\$ 6,629,242</u>
<b>Liabilities</b>						
Accounts payable	\$ 98,345	\$ 120,319	\$	\$	\$	\$ 218,664
Accrued expenses:						
Annual Leave	38,645					38,645
Due to other funds	70,000	653,466				723,466
General long-term debt					1,051,733	1,051,733
	<u>206,990</u>	<u>773,785</u>			<u>1,051,733</u>	<u>2,032,508</u>
<b>Fund Equity</b>						
Investment in general fixed assets				1,699,263		1,699,263
Fund balances:						
Reserved for prepaid expenditures	1,372					1,372
Reserved for employee retirement benefits			1,912,009			1,912,009
Unreserved:						
Designated for specific fund purposes	708,239					708,239
Undesignated		275,851				275,851
Total fund equity	<u>709,611</u>	<u>275,851</u>	<u>1,912,009</u>	<u>1,699,263</u>	<u>-</u>	<u>4,596,734</u>
	<u>\$916,601</u>	<u>\$ 1,049,636</u>	<u>\$ 1,912,009</u>	<u>\$ 1,699,263</u>	<u>\$ 1,051,733</u>	<u>\$ 6,629,242</u>

\*Complete audit report is available for examination at ORSANCO's office.



## Combined Statement of Revenues, Expenditures, and Changes in Fund Balances

### All Governmental Fund Types

### Year Ended June 30, 1999

	<u>Governmental Fund Types</u>		Total (Memorandum Only)
	<u>General Fund</u>	<u>Special Revenue Funds</u>	
<b>Revenues</b>			
Federal, State and Local grants	\$	\$ 1,468,106	\$ 1,468,106
State assistance	1,131,000		1,131,000
Contributions		226,860	226,860
Other	<u>68,581</u>	<u></u>	<u>68,581</u>
	1,199,581	1,694,966	2,894,547
<b>Expenditures</b>			
Programs:			
Water Pollution Control and Abatement	786,857	653,093	1,439,950
Empact		67,588	67,588
Wet Weather Study of the Hannibal Pool		22,976	22,976
Buoy Stationed Oil Spill Remote Sensing	204	1,154	1,358
Cincinnati Area Wet Weather Impacts Study		87,868	87,868
Louisville Area Wet Weather Impacts Study		163,960	163,960
Upper River Recreational Aquatic Habitat Study	9,458	46,834	56,292
Ohio River Sweep		206,615	206,615
Biological Trend Assessment		8,743	8,743
ORSANCO/Ohio River Users Program		9,409	9,409
Watershed Pollutant Reduction	16,226	306,685	322,911
Nutrients		55,038	55,038
Site Specific Procedures		365	365
Evaluation and Recommendations of			
Water Quality Models for the Ohio River		26,065	26,065
Guidelines of Delineating Mixing Zones for			
Ohio River Discharges		9,185	9,185
Guidelines of Determining Background			
Water Quality Conditions		24,155	24,155
U.S. Army Corps of Engineers/ORSANCO			
Partnership Program		19,284	19,284
OEPA/ORSANCO Sediment Dioxin Sampling		40,000	40,000
Developing Biological Criteria for the Ohio River		28,250	28,250
Great Lakes/Baltic Seas Partnership	1,202	3,312	4,514
SWAP on Interstate Waters		26	26
Source Water Monitoring System	1,941	39,353	41,294
Capital Outlay	<u>91,852</u>	<u></u>	<u>91,852</u>
	<u>907,740</u>	<u>1,819,958</u>	<u>2,727,698</u>
<b>Excess of revenues over expenditures (expenditures over revenues)</b>	291,841	(124,992)	166,849
<b>Other financing sources</b>			
Operating transfers in		774	774
Operating transfers out	<u>(774)</u>	<u></u>	<u>(774)</u>
<b>Excess of revenues and other sources over expenditures (expenditures over revenues and other sources)</b>	291,067	(124,218)	166,849
<b>Fund equity, beginning of year</b>	<u>418,544</u>	<u>400,069</u>	<u>818,613</u>
<b>Fund equity, end of year</b>	<u>\$ 709,611</u>	<u>\$ 275,851</u>	<u>\$ 985,462</u>

## *Administrative Issues*

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

### *Elected Officers*

In 1999, Roy Mundy of Kentucky was elected Chairman and Vasiliki Keramida of Indiana was elected Vice Chairman. Douglas Conroe of New York was elected Secretary/Treasurer. These offices are held July 1, 1999 through June 30, 2000.

### *New Commissioners*

During 1999, the following Commissioners were appointed to ORSANCO:

21	Illinois:	Thomas Skinner
	Indiana:	Lori F. Kaplan
	Ohio:	Christopher Jones
	Virginia:	Lance W. High; Thomas V. Van Auken; Karl F. Wenger, Ph.D.
	West Virginia:	Michael Castle

### *In Memory*

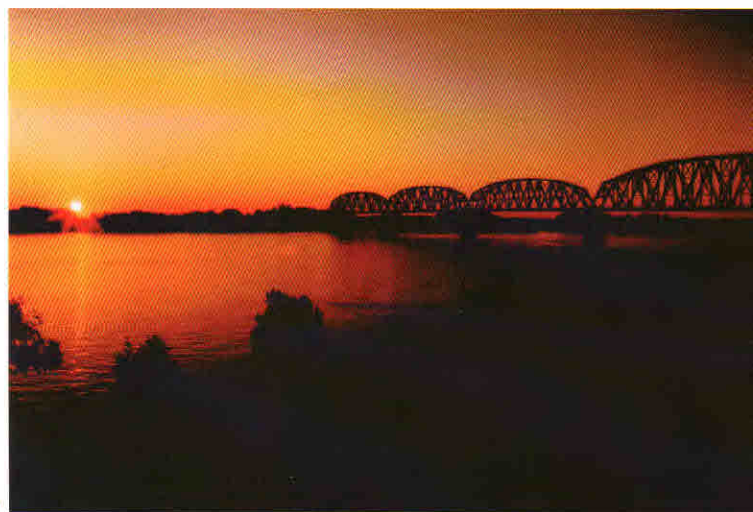
ORSANCO records the death of Albert Kendrick of Indiana. Commissioner Kendrick, who served on the Commission for 8 years, was Chairman in 1991-92.

### *Years of Service*

The following staff members were recognized in January, 1999 for their years of service to ORSANCO:

Alan Vicory	20 Years
Jason Heath	10 Years
Jonathan McSayles	10 Years
Erich Emery	5 Years
James Gibson	5 Years
John McManus	5 Years

*Photo by Al Harding, Jr., Henderson, Kentucky*





## ORSANCO Staff\*

David Bailey, Human Resources Manager  
Rhonda L. Barnes-Kloth, Communications Coordinator  
Donna M. Beatsch, Data Processing Specialist  
Samuel A. Dinkins, Environmental Specialist  
Tracey A. Edmonds, Public Information Programs Secretary  
Geoffrey M. Edwards, Environmental Specialist  
Erich B. Emery, Aquatic Biologist  
Constance R. Gabbard, Administrative Assistant  
James P. Gibson, Jr., Environmental Specialist  
Joseph T. Gilligan, Comptroller  
Jason Heath, Water Quality Monitoring & Assessment Programs Manager  
Barbara A. Horton, Technical Programs Secretary  
Jeanne J. Ison, Public Information Programs Manager  
John C. McManus, Environmental Specialist  
Jonathan A. McSayles, Analytical Chemist  
Kimberly A. Myers, Environmental Engineer  
Deborah M. Olszowka, Environmental Specialist  
Robert L. Ovies, Data Systems Administrator  
Crystal Richardson, Environmental Specialist  
William H. Riddle, Building Maintenance  
Kristi K. Rose, Public Information Specialist  
Jerry G. Schulte, Senior Biologist  
Peter A. Tennant, P.E., Deputy Executive Director  
Alan H. Vicory, Jr., P.E., DEE, Executive Director & Chief Engineer  
Matthew Wooten, Biologist  
Danielle Yockey, Graphic Designer/Illustrator

\* As of December 31, 1999

## Publications

ORSANCO publications provide information on water quality conditions, results of investigations, and ORSANCO activities. Charges are levied for some publications to cover production and mailing costs. These charges are waived for requests from educational institutions, government agencies, and nonprofit organizations.

The following publications were produced in 1999:

The Ohio River & Its Uses

A coloring/activity book for children of all ages.

ORSANCO Annual Report 1998

Emergency Response Directory (June 1999; December 1999)

A compilation of instructions for notifying appropriate agencies when a spill or accidental discharge to the Ohio River occurs.

Quality Monitor

Semiannual publication of data summaries from the Bimonthly Sampling and Bacteria Programs, and the Organics Detection System.

RiverWatchers Newsletter

ORSANCO Outlook

## Regulatory Agencies of the Member States

### ILLINOIS

Environmental Protection Agency  
Division of Water Pollution Control  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

### INDIANA

Department of Environmental Management  
Office of Water Management  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015

### KENTUCKY

Natural Resources & Environmental Protection  
Cabinet  
Division of Water Quality  
14 Reilly Road  
Frankfort, KY 40601

### NEW YORK

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

### OHIO

Environmental Protection Agency  
Division of Water Pollution Control  
P.O. Box 1049  
Columbus, OH 43215-1049

### PENNSYLVANIA

Department of Environmental Protection  
Bureau of Water Quality Management  
P.O. Box 8465  
Harrisburg, PA 17150-8465

### VIRGINIA

Department of Environmental Quality  
P.O. Box 10009  
Richmond, VA 23240

### WEST VIRGINIA

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



