

The Ohio River Valley Water  
Sanitation Commission  
2005 Annual Report



# Working Beyond Boundaries



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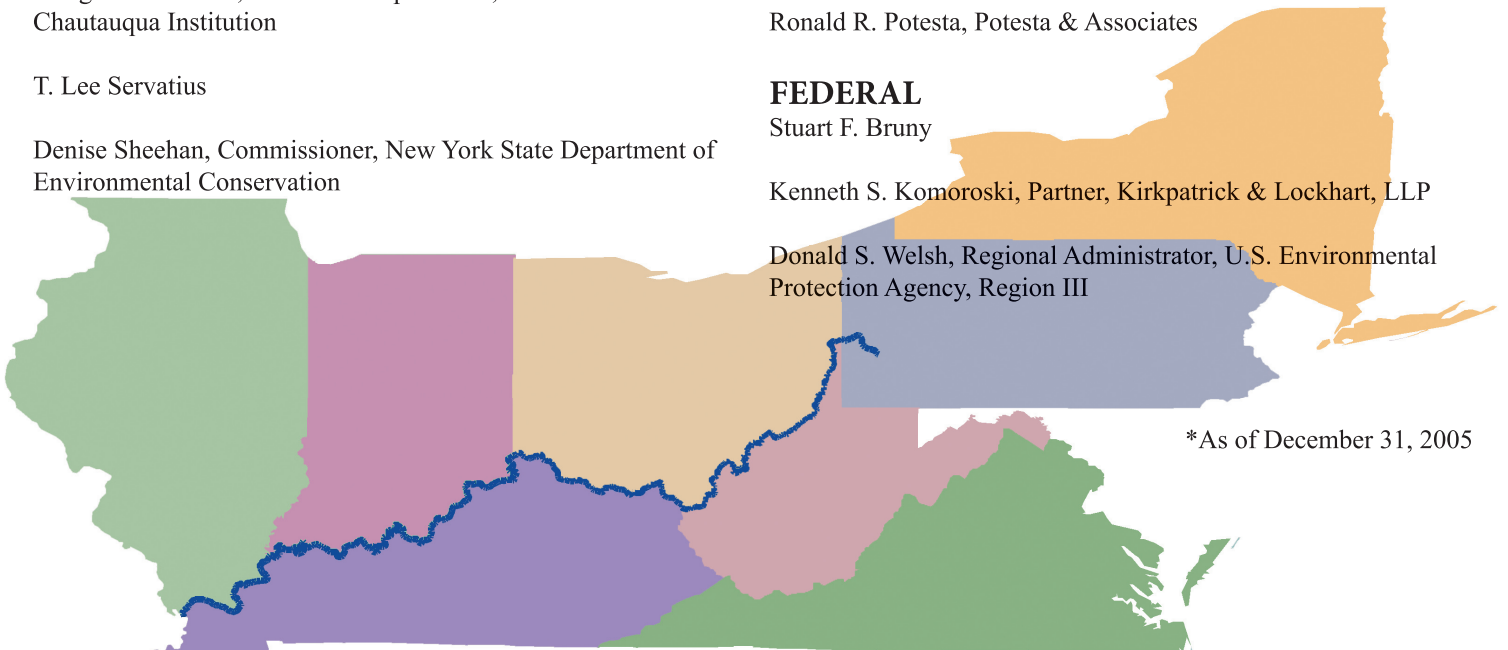
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Kenneth S. Komoroski, Partner, Kirkpatrick & Lockhart, LLP

Donald S. Welsh, Regional Administrator, U.S. Environmental  
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\*As of December 31, 2005



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 approval of the Congress of the United States. The Commissioners of ORSANCO respectfully submit the following report of activities for 2005 to:

The Honorable Rod R. Blagojevich  
Governor of Illinois

The Honorable Mitch Daniels  
Governor of Indiana

The Honorable Ernest L. Fletcher  
Governor of Kentucky

The Honorable George E. Pataki  
Governor of New York

The Honorable Robert A. Taft II  
Governor of Ohio

The Honorable Edward G. Rendell  
Governor of Pennsylvania

The Honorable Tim Kaine  
Governor of Virginia

The Honorable Joe Manchin III  
Governor of West Virginia

And

The Honorable George Walker Bush  
President of the United States

# Chairman's Message

The Ohio River Valley holds vital environmental, economic, and cultural importance for our nation. The communities, industries, and agricultural interests of the basin states all affect the water quality of the Ohio River. The Ohio River, in turn, has an impact on the Mississippi River and the Gulf of Mexico. As our knowledge of the interdependence of water quality issues deepens, it illustrates the need to work cooperatively across agencies, states, and regions. ORSANCO remains a leader in this effort.

The foresight of the member states to form and maintain the Commission has state, national, and international benefits. Outside the federal government, few organizations do what the Commission does on the same scale. Representatives from numerous interests participate in Commission activities through its extensive committee structure and provide important input from diverse viewpoints. Our mandate to track spills is unique, and our programs, such as biological monitoring and the Organics Detection System, are second to none.



In 2005 the Commission continued to make meaningful water quality progress through partnerships on many levels. Through ORSANCO's Ohio River Users Program, participating industries and utilities contribute funds toward applied research that would otherwise be too costly to undertake. Of particular relevance is a current study on the presence and effects of endocrine disrupting compounds.

ORSANCO's Organics Detection System (ODS), the monitoring network established in 1978 to protect drinking water supplies on the Ohio River, could not operate efficiently without the public-private partnership between the Commission and the water suppliers. The ODS provides an additional layer of protection in the context of national homeland security.

The Commission's public participation programs, including River Sweep, the RiverWatchers volunteer monitoring program, and Life Below the Waterline traveling aquarium, are all the result of public-private partnerships and benefit through contributions from public and private organizations.



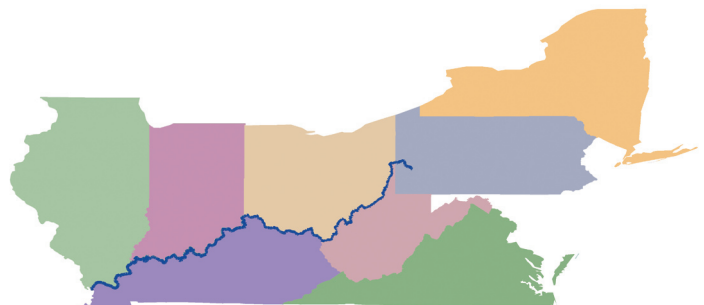
Mile point 0 at Pittsburgh, Pennsylvania

In addition to these regional partnerships, ORSANCO continues to expand its work and influence beyond the borders of the Ohio River Valley. The Commission is contributing to the groundbreaking efforts of the Gulf of Mexico Watershed Nutrient Task Force. ORSANCO has also been involved with the Great Rivers Ecosystem Study, helping to develop new monitoring and assessment techniques.

Several important events occurred within the Commission in 2005. As part of its triennial review of the Pollution Control Standards, ORSANCO is working to develop water quality objectives for bacteria during wet weather conditions. The Commission completed a river-wide assessment of bacteria levels and support of contact recreation use. ORSANCO continued to implement its new biological monitoring strategy, and restructured its fish tissue sampling and analysis program to include the ability to assess trends along the river. In January 2005, the Commission responded to a crude oil spill on the Kentucky River with on-river sampling to assist in protecting downstream water utilities.

As our knowledge of water quality conditions and impacts grows, so must our willingness to cooperate on many levels to effect positive change. ORSANCO continues to forge new paths and new partnerships, while maintaining the important programs that help meet its core goal of improving water quality in the Ohio River Basin.

A handwritten signature in black ink, reading "Michael E. Cook". The signature is written in a cursive style.





## Ohio River Water Quality Conditions in 2005

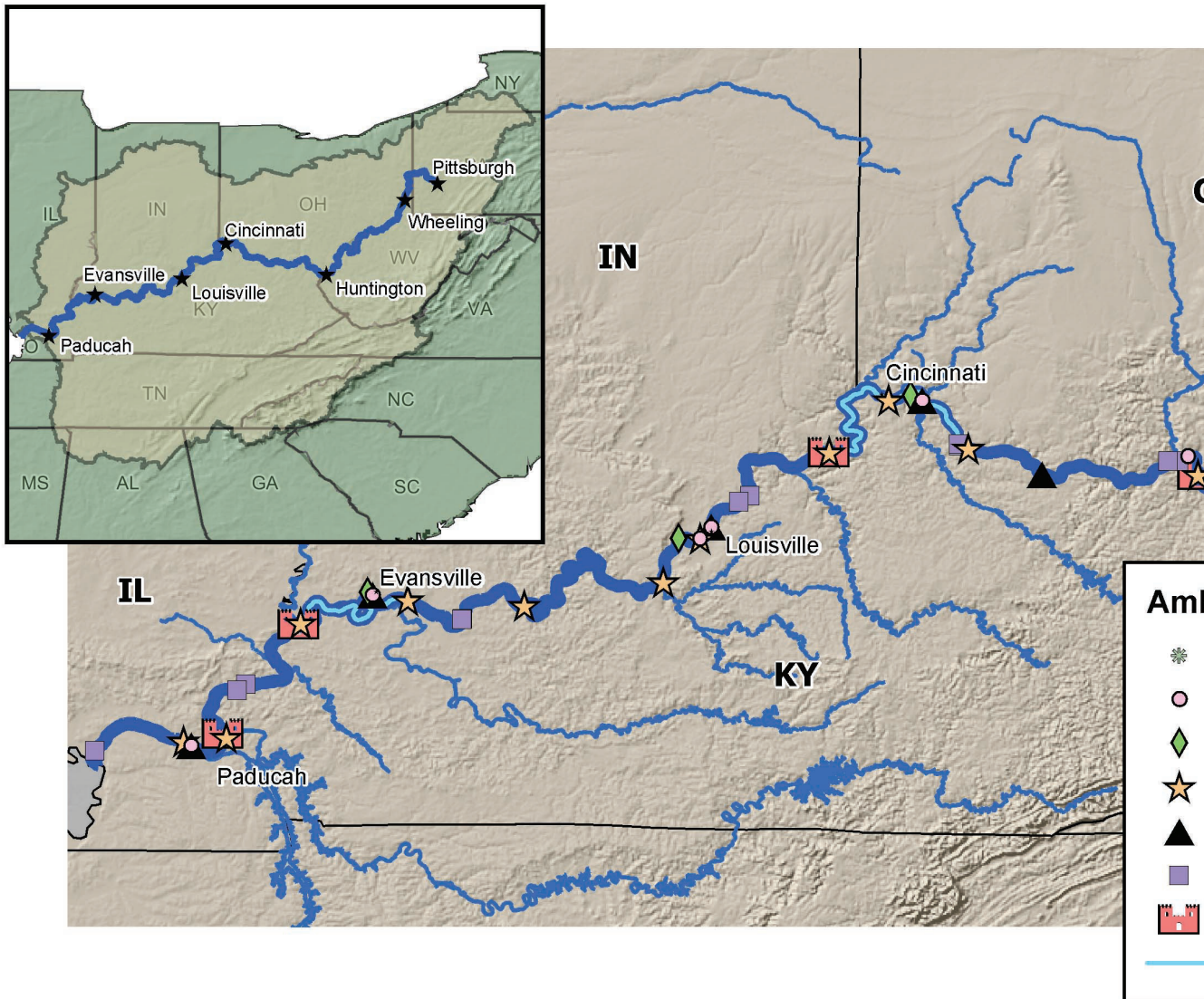
The Ohio River Valley Water Sanitation Compact designates the Ohio River to be “available for safe and satisfactory use as public and industrial water supply after reasonable treatment, suitable for recreational use, capable of maintaining aquatic life...and adaptable to such other uses as may be legitimate.” ORSANCO conducts water quality monitoring and assessments on behalf of the Ohio River mainstem states (Illinois, Indiana, Kentucky, Ohio, Pennsylvania and West Virginia) and reports the degree to which the river supports each of these designated uses.

### Public Water Supply

Public water supply use support is assessed based on chemical water quality data collected from ORSANCO’s bimonthly sampling program and bacteria monitoring. Based on the results of these programs, the entire river was classified as fully supporting the public water supply use.

### Contact Recreation

Data from ORSANCO’s recreation season monitoring program (May-October) and longitudinal bacteria surveys are used to assess use support for recreation in which people come in direct contact with river water. Based on these data, 475 miles of the Ohio River were classified as impaired (fair or poor water quality) for contact recreation. Over fifty percent of the Ohio River was classified as fully supporting the contact recreation use.



### Aquatic Life

Ohio River warm water aquatic life use support is assessed based on chemical water quality data collected monthly from ORSANCO's 17 sampling stations on the Ohio River mainstem, as well as direct measurements of fish communities using ORSANCO's Ohio River Fish Index (ORFI<sub>n</sub>). No impairment was indicated from either the water quality data or the biological data; 981 miles (100 percent) of the Ohio River were classified as fully supporting the aquatic life use.

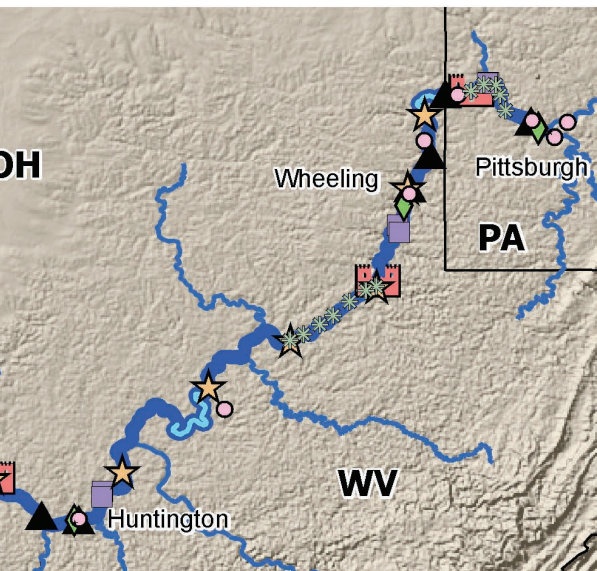
### Fish Consumption

The entire 981 miles of the Ohio River are impaired for fish consumption due to dioxin and PCBs. States have issued fish consumption advisories for the entire river based on levels of PCBs found in fish tissue. In addition, river-wide water samples analyzed for both dioxin and PCBs exceed water quality criteria to protect against unwanted bioaccumulation in fish tissue in all samples collected.

### Pollution Control Standards

ORSANCO sets Pollution Control Standards for industrial and municipal waste water discharges to the Ohio River. These Standards designate specific uses for the River (public water supply, recreation, and aquatic life) and establish guidelines to ensure that it can support these uses.

To keep pace with current issues, the Commission reviews the Standards every three years. In 2005, ORSANCO held public workshops in Wheeling, WV, Huntington, WV, Louisville, KY, Pittsburgh, PA, Evansville, IN, Marietta, OH and Cincinnati, OH to discuss the proposed revisions. Among the issues under consideration are water quality objectives and temporary suspension of contact recreation use in episodic occurrences of heavy rainfall or high river flows.



### Monitoring Stations

- Integrated Monitoring Sites
- ODS Sites
- Bacteriological Monitoring- major CSO communities
- Clean Metals & Bimonthly Monitoring Stations
- Nutrient Monitoring Stations
- Biological Fixed Stations
- 2005 Lockchambers Events
- 2005 Biological Pool Surveys

In September 2005, ORSANCO collaborated with U.S. EPA to sponsor a combined sewer overflow (CSO) workshop in the Greater Cincinnati area. This workshop was designed to help small communities develop long-term control plans to comply with the requirements of the National CSO Policy. LaJuana Wilcher, Secretary of the Kentucky Environmental and Public Protection Cabinet and former U.S. EPA Assistant Administrator for Water, delivered the keynote address at the workshop.

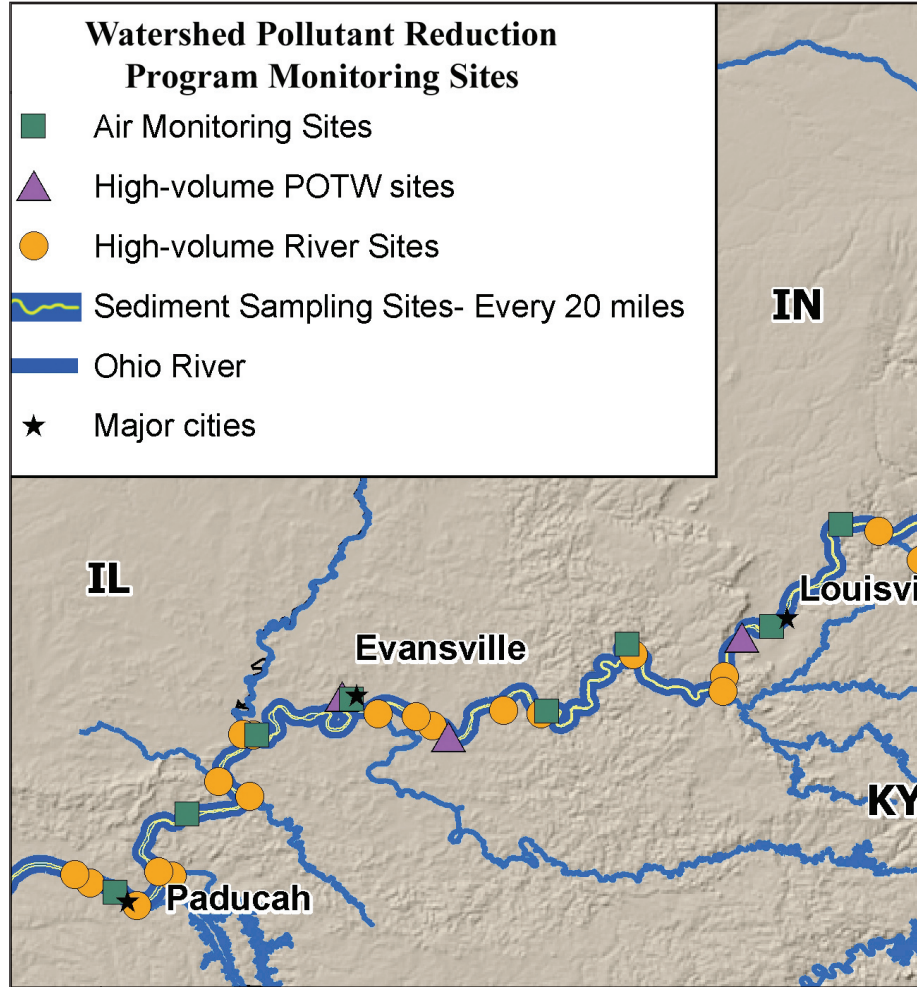




# Watershed Pollutant Reduction Program

ORSANCO initiated the Watershed Pollutant Reduction Program in 1995 to characterize the extent and severity of water pollution in the Ohio River and develop integrated interstate strategies to reduce select pollutants in the River. During its first ten years the program has achieved a number of important objectives. The Commission has developed total maximum daily loads (TMDLs) for dioxin and PCBs for certain reaches of the Ohio River, and is working to complete river-wide TMDLs for both pollutants.

The Commission also used monitoring data to estimate the relative contributions of PCBs from various sources (e.g. sediments, atmospheric, point sources). A special task force will be convened to develop recommendations to reduce PCB loadings to the Ohio River. This task force will include representatives from U.S. EPA Regions 3, 4, and 5, one state from each region, the Delaware River Basin Commission, and ORSANCO's POTW, Power Industry, and Chemical Industry Advisory Committees.



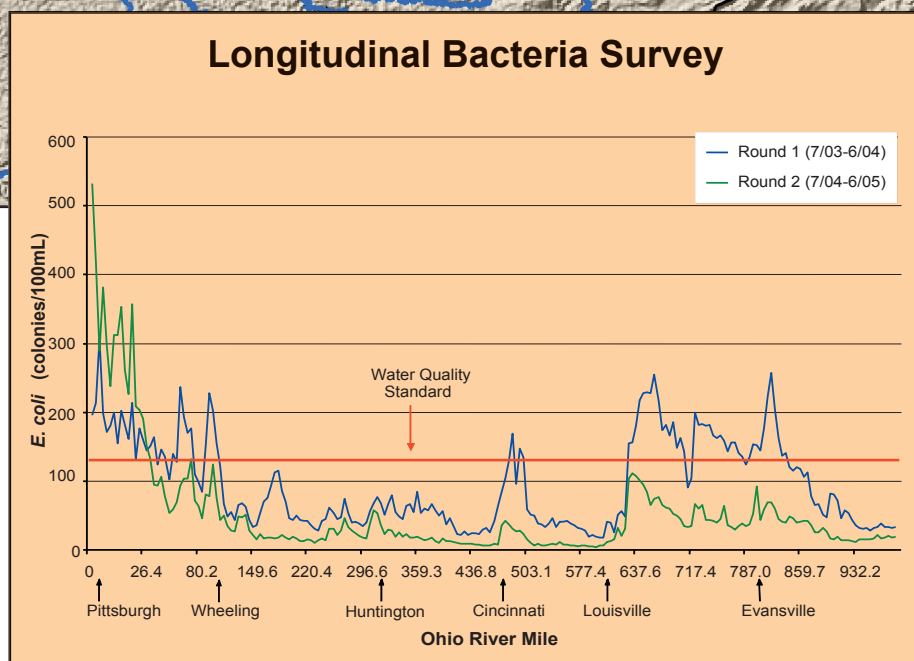
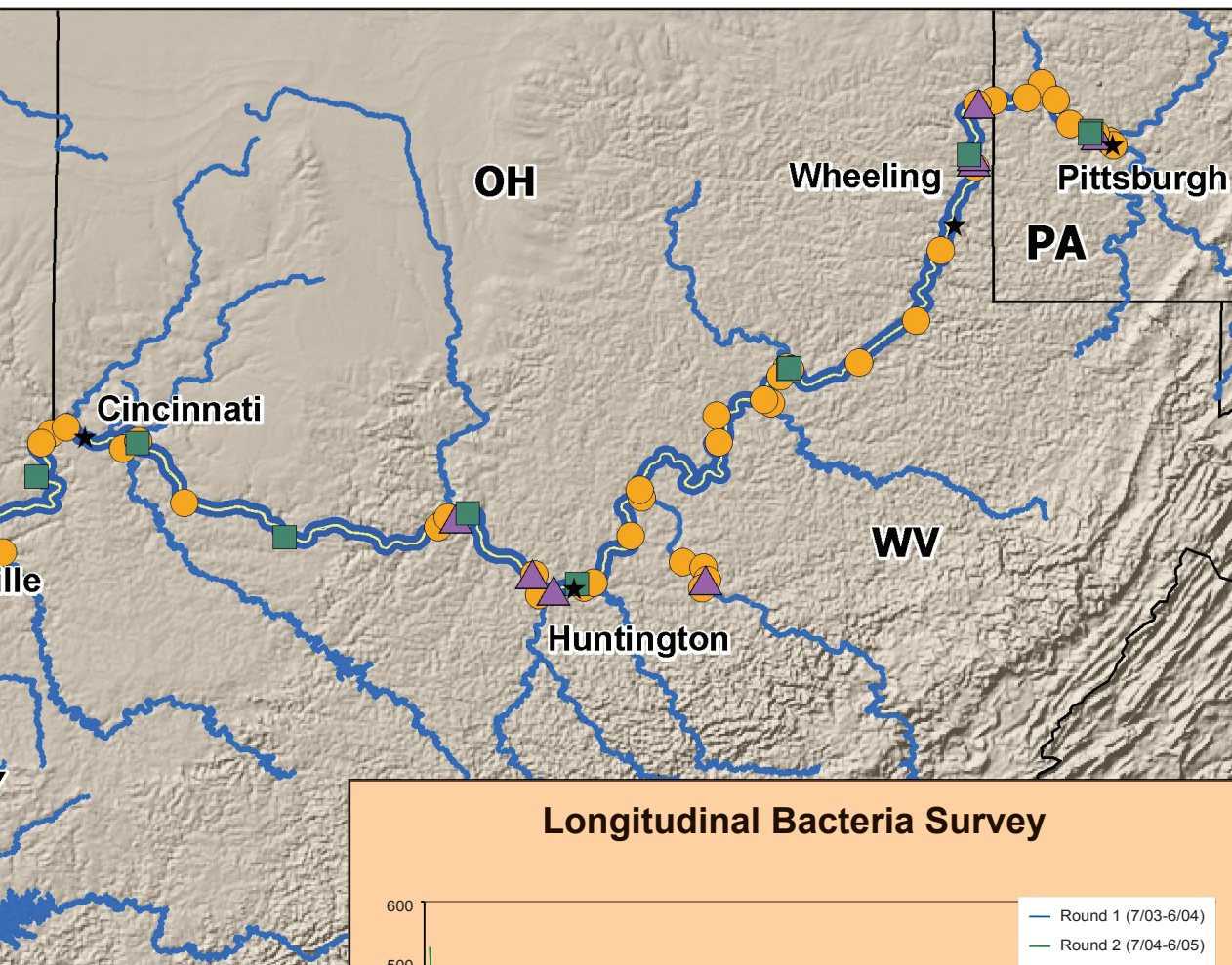
### What is a TMDL?

A total maximum daily load (TMDL) is the maximum amount of a pollutant that can be present in a body of water without causing impairment or exceeding state water quality standards.



## Longitudinal Bacteria Surveys

While work continues on PCBs and dioxin, the focus of the Watershed Pollutant Reduction Program has expanded to include bacteria. Bacteria monitoring in remote areas of the river poses special challenges because samples must be analyzed within six hours of collection. In the past, ORSANCO's bacteria data were limited to samples collected near six major urban areas: Evansville, Louisville, Cincinnati, Huntington, Wheeling and Pittsburgh. The Commission's Mobile Water Quality Laboratory is equipped to perform bacterial analysis on-site. This has allowed ORSANCO to monitor the entire 981 mile length of the Ohio River for the first time, and identify impaired sections of the river. The Commission will work with its member states to develop TMDLs for pathogens.





The Commission's biological monitoring program allows scientists to measure and understand the integrity and stability of the biotic community of the Ohio River.

## Biological Monitoring

For years, researchers struggled to develop tools for measuring the biological health of large rivers like the Ohio. In 2003, ORSANCO completed development of such a tool: the Ohio River Fish Index (ORFIn). The ORFIn combines various measures of the fish community to produce a score; a higher score indicates a more desirable community that reflects improved water quality.

The Commission then initiated a monitoring program to apply the ORFIn. ORSANCO's current monitoring strategy consists of surveys of navigational pools and annual monitoring at select, fixed locations throughout the River.

This approach enables ORSANCO to report on the conditions of the individual pools, locate problem areas, and track long-term trends. Using probabilistic monitoring, ORSANCO samples navigational pools on a rotating basis, so that all portions of the river are visited and comprehensively sampled every five years.



In addition, the Commission established a network of 18 fixed monitoring stations along the entire length of the Ohio River. These stations are sampled every year at the same time, providing a "snapshot" of the river from top to bottom, and from year to year, with the ability to show long-term trends.

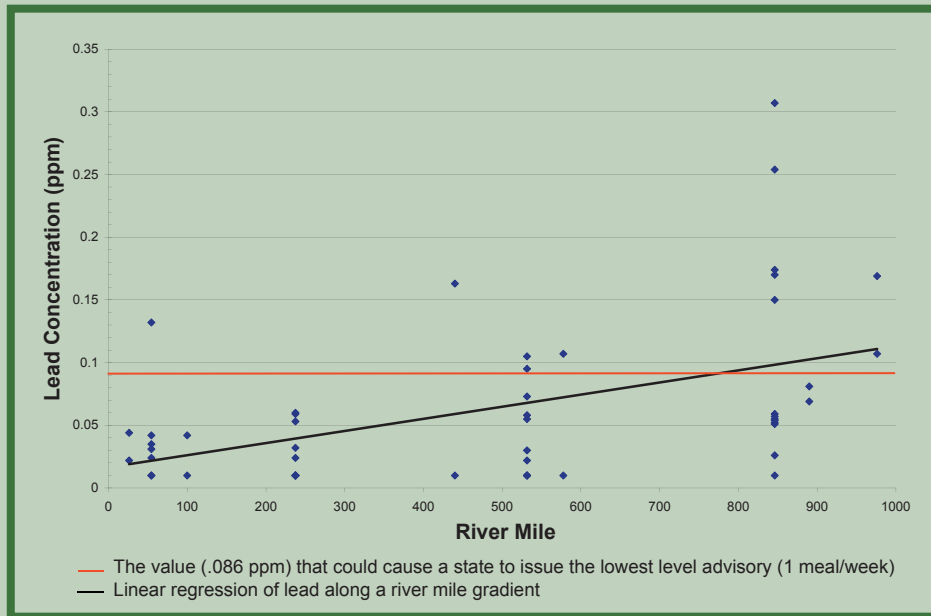
The Commission continues to expand the focus of its monitoring programs in other ways as well. Collaborating with U.S. EPA and state agencies, ORSANCO plans to determine if the ORFIn can be adapted for application in other large river systems such as the Wabash, Kanawha and Monongahela rivers. Work is also underway to develop an index for the Ohio River macroinvertebrate community as another tool for measuring water quality.



## Fish Tissue Contaminants

Since 1991, ORSANCO has conducted electrofishing to assess fish populations and collect tissue to analyze for certain contaminants. The Ohio River mainstem states can then use this analysis to consider issuing fish consumption advisories. The fish tissue program was revised in 2003 to additionally collect tissue samples from a list of target species. This additional information is used to assess trends along the river, through time, and throughout the water column. The new monitoring program revealed some trends that had not previously been detectable. For example, the data showed an increasing trend of lead in fish tissue from upriver to downriver (see graph).

Lead Concentrations in 2004 Fish Tissue Samples



ORSANCO crew electrofishing at night



# Drinking Water Source Protection

## Organics Detection System

Protecting the drinking water source for over five million people has been of paramount importance to the Commission since its inception. With industries, pipelines, barge traffic and other potential sources of contamination, chemical spills and discharges can go unreported or undetected. ORSANCO established the Organics Detection System (ODS) in 1978 to protect drinking water intakes on the Ohio River and major tributaries from organic chemical contamination. Today, 13 facilities participate in the ODS, sampling and analyzing river water samples on a daily basis.

The ODS continues to be recognized both nationally and internationally as a premier spill detection system. Increasingly, organizations and utilities around the world seek ORSANCO's expertise concerning implementing detection systems.

The ultimate worth of the ODS, however, is reflected in terms of spills detected and tracked. The system demonstrated that worth several times in 2005, as described on the following page.

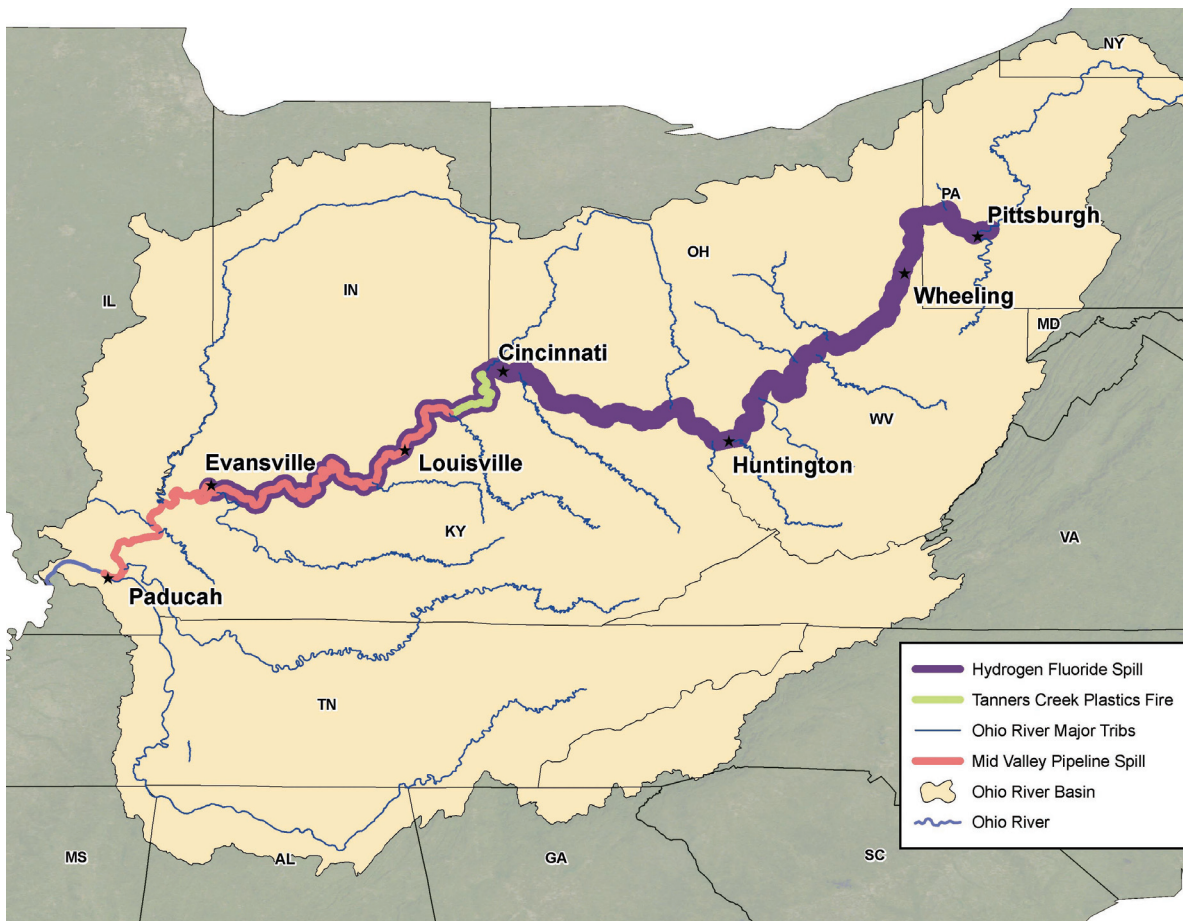
## Recognizing Professionalism and Excellence in Water and Wastewater Treatment

The Registry of Distinguished Operators was created by the Commission to recognize those drinking water and wastewater operators in the Compact District who have demonstrated expertise in the operation of their utilities, exemplifying a commitment to quality drinking water and clean streams for Ohio Valley citizens. Candidates for the Registry must possess the highest certification required by their facility and undergo an on-site evaluation.

Mr. Edgar Ford of the Municipal Authority of the Township of Robinson Water Treatment Plant was added to the Registry in 2005.



Booming operation to contain crude oil on the Kentucky River



Spills Tracked with Organics Detection System Capabilities in 2005

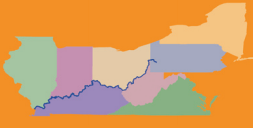
## Emergency Response

ORSANCO was involved in several spill incidents during 2005. On January 26, a pipeline ruptured and released an estimated 260,000 gallons of crude oil into the Kentucky River. ORSANCO provided assistance conducting on-river sampling to protect the Louisville Water Company and other downstream users. The Organics Detection System detected benzene, toluene, and xylene compounds in the Ohio River well ahead of the observed surface oil plume, and tracked passing concentrations of these compounds at both Evansville and Paducah drinking water utilities.

On February 1, train cars carrying anhydrous hydrogen fluoride derailed and plunged into the Allegheny River near Pittsburgh. ORSANCO facilitated communications among drinking water utilities. Fluoride levels were monitored in the Allegheny and Ohio rivers for more than 800 miles. Monitoring indicated that fluoride levels did not reach the Federal Safe Drinking Water Act Maximum Contaminant Level (MCL) of 4 ppm.

In early July, a fire at a Lawrenceburg, Indiana warehouse containing recycled plastics burned uncontrolled for several days. Wash water from the fire entered Tanner's Creek near the Ohio-Indiana border. Sample analyses showed that styrene, benzene and toluene were present in the creek, but were below detectable levels in the Ohio River.





## Improved Decision Making Through Research

Through a cooperative effort with Ohio River water users, special research projects are carried out under the ORSANCO/Ohio River Users Program. This innovative concept provides a mechanism for program investors to recommend and fund studies designed to improve the scientific basis for water quality management decisions.

### Endocrine Disrupting Compounds

In 2005, ORSANCO's Research Committee identified, as a top research priority, a class of contaminants of emerging concern known as endocrine disrupting compounds (EDCs). The presence of EDCs in water has been linked to a wide variety of developmental and reproductive abnormalities in aquatic life, and may also be linked to human health issues. The ORSANCO/Ohio River Users Program funded a pilot study to measure the presence and effects of EDCs on fish exposed to effluents from selected wastewater treatment facilities along the Ohio River. Collaborating with ORSANCO in this effort are the U.S. EPA and U.S. Geological Survey. The project will serve to effectively expand, enhance, and provide an Ohio River focus to national EDC research efforts. Initial tests results confirm significant evidence of effects that could be related to EDC exposure.

### Sharing Biological Analysis Tools

ORSANCO/Ohio River Users Program funds are also supporting the development of an Ohio River Fish Index software program. This computer application will allow scientists to enter fish data and calculate Ohio River Fish Index scores, which can be used to determine if specific areas of the river support the designated aquatic life use.



Preparing Ohio River fish samples for genetic analysis

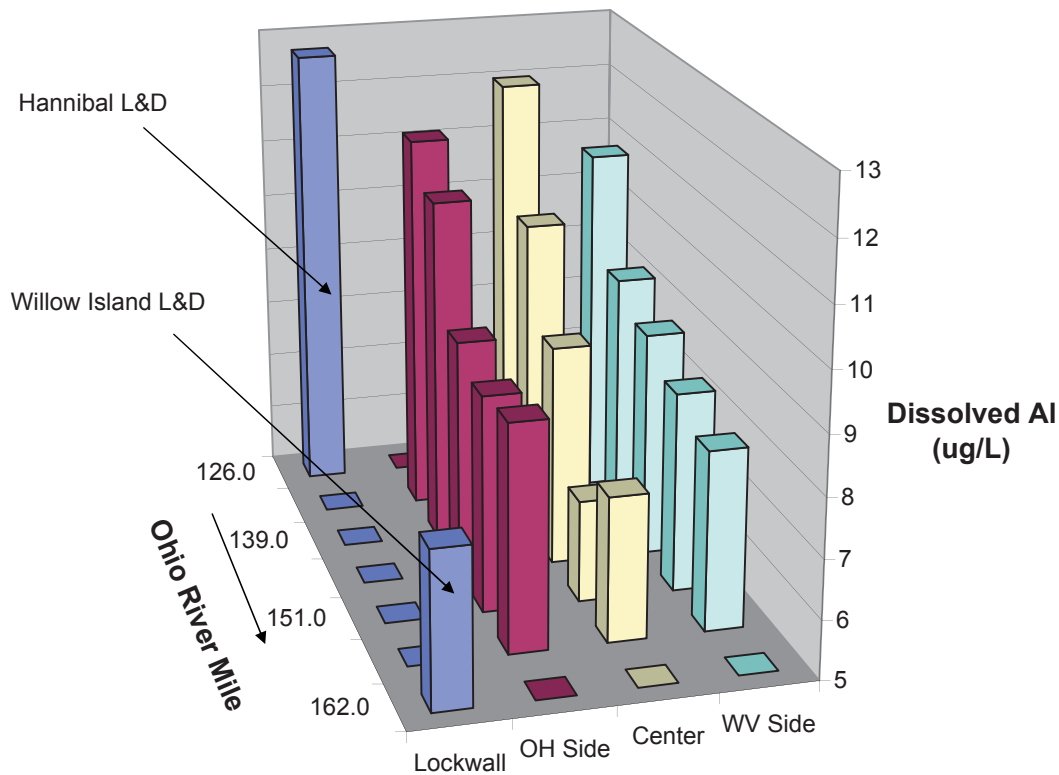


## Integrating ORSANCO's Monitoring Programs

ORSANCO conducts monitoring programs to assess the water quality conditions of the Ohio River and the health of its aquatic community. In essence, water chemistry data describe what types of pollutants are present, and biological data describe the types and condition of fish and other aquatic organisms. While water quality and biological conditions would seem connected, the results of these monitoring programs do not always agree. In some areas of the river, water quality is not as good as would be expected based on the health of the aquatic community.

ORSANCO is carrying out an integrated assessment study to better interpret the results of its monitoring programs. This study focuses on several Ohio River navigational pools. The Commission's sampling programs are coordinated to better understand the extent to which water chemistry data relates to biological monitoring results. It will also determine whether ORSANCO's monitoring stations, which are located at either end of Ohio River pools, describe the water quality conditions of the entire pool (see figure below).

Dissolved Aluminum in Willow Island Pool  
October 26, 2005



This figure illustrates side-to-side and downstream variation in dissolved aluminum concentrations in the Willow Island navigational pool. The data are presented as if looking upstream from the Willow Island Lock and Dam, and show a decreasing trend for aluminum in the downstream direction, with fairly consistent concentrations from bank to bank. This type of survey helps demonstrate that a lock wall sample can approximate conditions across the entire pool.

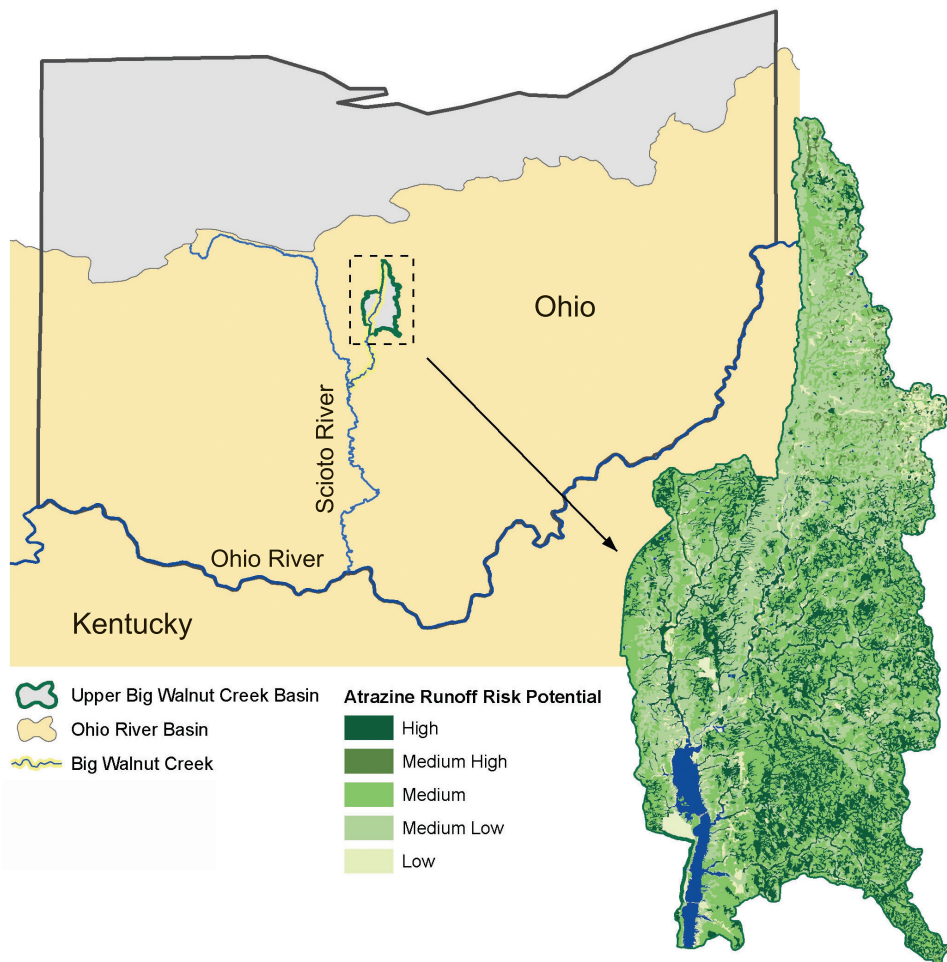


## Methods to Control Pollution from Diffuse Sources

Diffuse, or nonpoint source water pollution, is not traceable to any single source, but results from many activities in both urban and rural areas. It remains the leading cause of water quality impairment in the nation. One way to control this type of pollution is by encouraging the use of best management practices (BMPs), non-regulatory methods designed to minimize water quality impacts. Each year, billions of dollars are allocated to such programs, yet little is known about their effectiveness. For the past three years, ORSANCO, supported by Malcolm Pirnie Inc., has worked to evaluate the water quality benefits of nonpoint source pollution abatement technologies.

The evaluation study area is the Upper Big Walnut Creek watershed, which provides drinking water for more than 750,000 people in Central Ohio. The agricultural herbicide atrazine has been detected in Hoover Reservoir at levels exceeding finished drinking water standards. Since 1999, the U.S. Department of Agriculture (USDA) has provided more than \$2.5 million to farmers to implement BMPs in this watershed. The study is characterizing the risk of atrazine runoff and quantifying the USDA program's performance. Preliminary results suggest that the program has sufficiently reduced the levels of atrazine runoff. This methodology can also be applied to other watersheds and adapted to other nonpoint source pollutants such as sediment, toxics and nutrients.

Upper Big Walnut Creek Watershed  
Atrazine Runoff Risk Potential





In 2005, the Commission continued to expand its work and impact beyond the Ohio River Valley region. This expanding presence contributes to improved information about river health and the interrelationships of major river basins. This, in turn, will help scientists and the public make better decisions about river management.

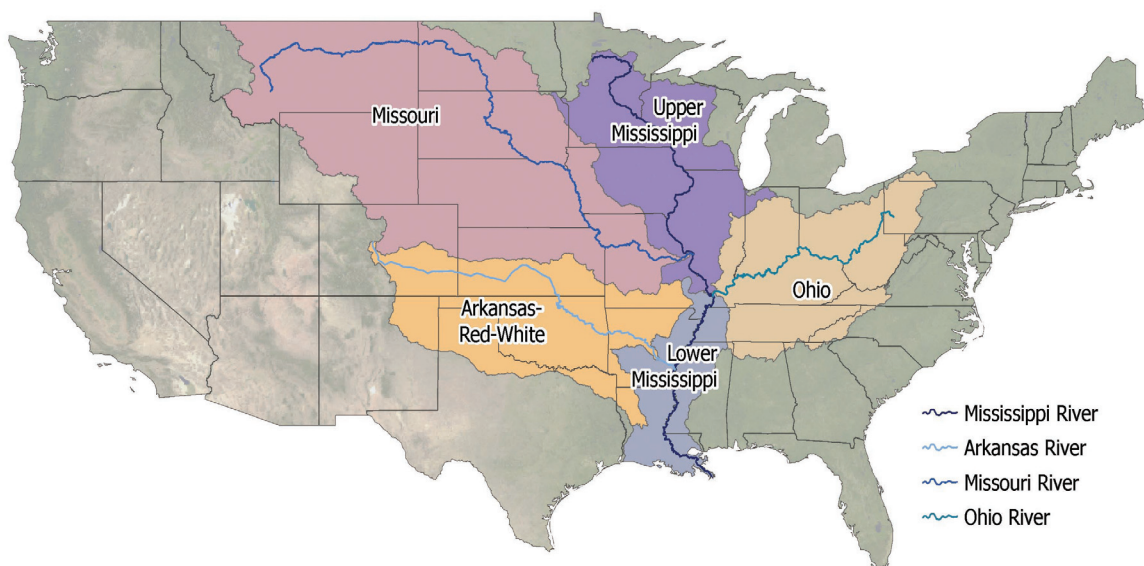
## Gulf of Mexico Hypoxia

Each summer a “zone” of low oxygen forms in the Gulf of Mexico, threatening the nation’s largest commercial fishery. This hypoxic zone, which cannot sustain most marine life, is believed to be caused by excessive amounts of nitrogen and phosphorus delivered to the Gulf by the Mississippi River. Approximately 30 percent of these nutrients are contributed by the Ohio River and its tributaries. Excess nutrients come from a wide range of sources, including runoff from developed land, atmospheric deposition, soil erosion, and agricultural fertilizers. Sewage and industrial discharges also contribute nutrients.

U.S. EPA established the Mississippi/Gulf of Mexico Watershed Nutrient Task Force in 1997 to develop options for responding to Gulf of Mexico hypoxia. The Task Force formulated an Action Plan with a goal of reducing the hypoxic zone from its current size of 9,000 square miles (about the size of New Jersey) to 5,000 square miles.

In 2005, ORSANCO convened an Ohio River Sub Basin Committee, which has representatives from agricultural, environmental and natural resource agencies of the basin states. Currently this committee is developing a nutrient reduction strategy for the 200,000 square mile Ohio River Basin. Future plans include promoting demonstration projects that can be used as examples throughout the Basin.

Major Watersheds Contributing to Gulf of Mexico Hypoxic Zone

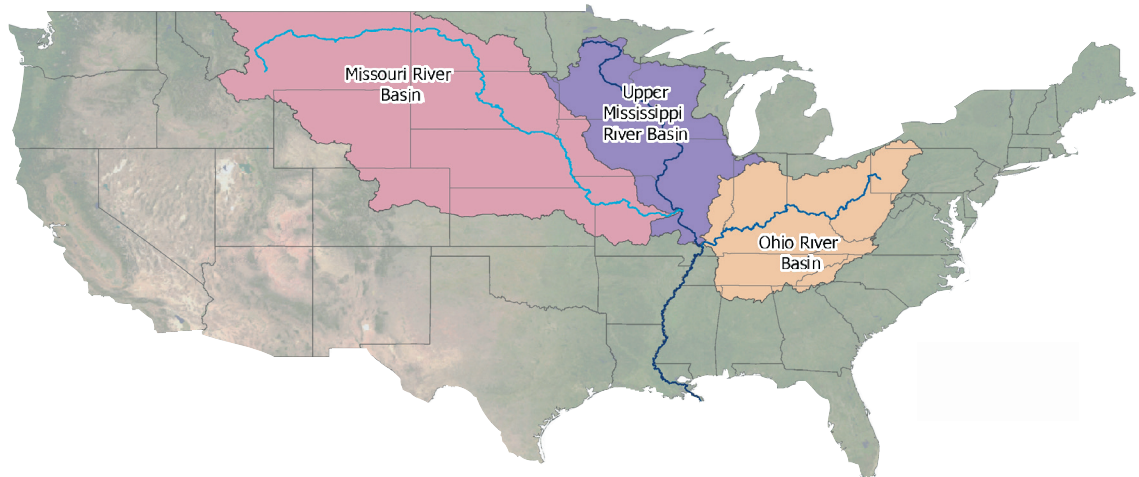


## Great Rivers Study

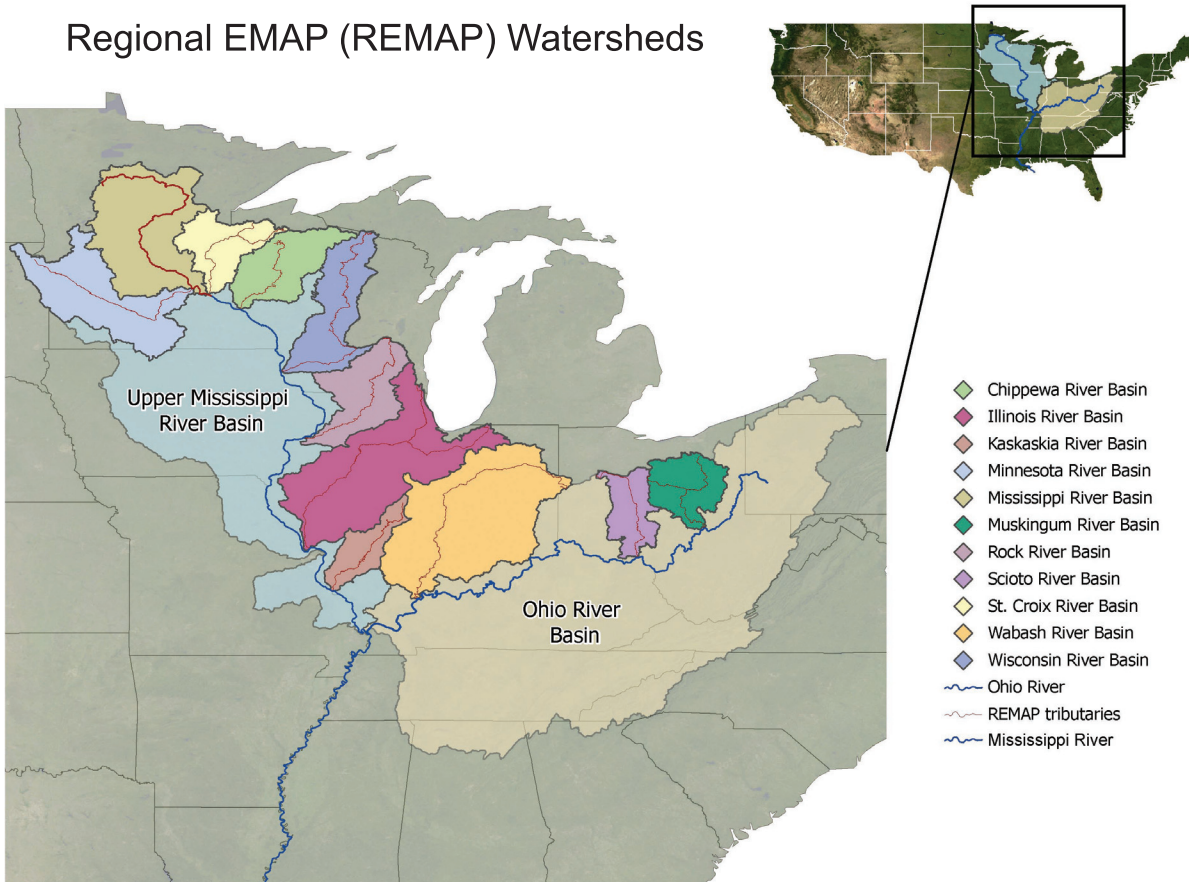
Since 2004, ORSANCO has participated in one of the most comprehensive scientific surveys ever conducted on the great rivers of the central United States. The U.S. EPA's Environmental Monitoring and Assessment Program (EMAP) Great Rivers Ecosystems (GRE) study will provide information to check the health of the Missouri, Mississippi, and Ohio rivers, three major waterways that link the upland streams of the central basin to the Gulf of Mexico.

ORSANCO has been instrumental in developing and carrying out the GRE study. As part of the GRE Science Advisory Committee and Technical Committee, the Commission confers on program objectives, priorities, and opportunities to fill important scientific gaps. ORSANCO is providing project scientists, training field crews, and conducting quality assurance audits to ensure the highest quality data possible.

EMAP-GRE Watersheds



## Regional EMAP (REMAP) Watersheds



## Large River Tributary Studies

In 2004, ORSANCO and the Midwest Biodiversity Institute (MBI) expanded previous monitoring strategies, which focused on the mainstem of the Ohio River, to include large tributaries of the Ohio River and the Upper Mississippi River Basin. In conjunction with U.S. EPA Region 5, ORSANCO and MBI began conducting sampling as part of two different projects funded by EPA's Regional EMAP (REMAP) Program and the Clean Water Act.

REMAP provides an opportunity for ORSANCO and MBI to investigate whether EMAP can be used on a smaller scale and in a shorter time frame. Data for this study are being collected on major Ohio River tributaries and large tributaries of the Upper Mississippi River.

Also funded by U.S. EPA, ORSANCO conducted a Methods Comparison Study during the same time and on the same tributaries as the REMAP project. Sampling methods used by ORSANCO and the participating states were compared to demonstrate how well various methods performed.

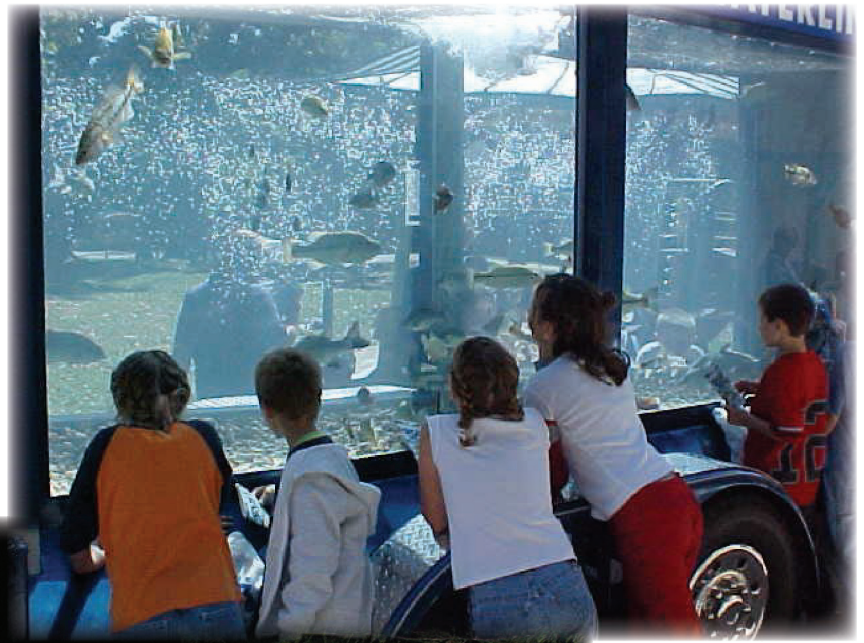




In addition to its monitoring and assessment programs, ORSANCO provides the public with diverse opportunities for hands-on involvement in water quality stewardship and educational materials.

## Life Below the Waterline

Life Below the Waterline is a 2,200 gallon mobile aquarium the Commission uses to demonstrate the abundant and diverse aquatic life of the Ohio River and its relationship to water quality. The aquarium is displayed at festivals and special events in communities throughout the Ohio River Valley. Ohio River fish, obtained near the point of display, are showcased in the aquarium during the event, giving people the opportunity to learn about the aquatic environment in their own area. 2005 was the aquarium's busiest year since the program began in 2002. It appeared in five states: West Virginia, Pennsylvania, Kentucky, Indiana and Ohio, at such events as the Junior BassMasters Classic in Kittanning, PA and the BassMasters Classic in Pittsburgh.



Ohio River fish on display at the BassMasters Classic in Pittsburgh, PA

# River Sweep

Annually since 1989, volunteers have turned out on the third Saturday in June to clear the shorelines of the Ohio River and its tributaries of trash and debris. The event encompasses more than 3,000 miles of riverbank from Pittsburgh, PA to Cairo, IL. In 2005, aided by perfect weather and river levels, over 22,000 people participated in the event. ORSANCO also sponsors a student poster contest in conjunction with the River Sweep. The 2005 River Sweep poster contest winner was Emily Vincent from Paden City, WV; the T-shirt design winner was Cory Parsons from Point Pleasant, WV.



## Corporate Sponsors:

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- Kentucky River Authority
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- Louisville Water Company
- Massac County Soil and Water Conservation District
- Mittal USA Weirton
- Neville Chemical
- Nova Chemicals
- Proctor & Gamble
- Rivertown Breakdown
- Sanitation District No. 1 of Northern Kentucky
- Toyota Motor Manufacturing North America, Inc.





## RiverWatchers Volunteer Monitoring Program

Established in 1992, the Commission's RiverWatchers Volunteer Monitoring Program provides hands-on training for students and other volunteers, enabling them to assist in acquiring information about water quality. At least five times per year, RiverWatchers monitor the Ohio River watershed by measuring various chemical parameters.

Monitoring groups serve as "watchdogs" in areas where ORSANCO cannot conduct routine monitoring. In 2004-2005, the program provided testing supplies and training for 23 schools and community organizations in the Ohio River Basin. Data are recorded and sent to ORSANCO for evaluation, permitting a "screening" of water quality in the areas monitored. Participants can enter their results directly on the ORSANCO website, and the data is immediately posted online.

School visits and teacher training workshops are held throughout the year to review the program and teach new techniques.



Volunteers performing chemical tests

In October, several groups collected data for World Water Monitoring Day, an international water quality monitoring event. Two new schools were added to the program for the 2005-2006 school year: Leon Elementary in Leon, WV, and Kings Mill Junior High in Cincinnati, OH.

### RiverWatchers Groups – 2004-2005

INDIANA: Lawrenceburg HS, Mater Dei HS, Rising Sun HS, Switzerland County HS

KENTUCKY: Boyd County Career and Technical Education Center, Daviess County HS, River Ridge Intermediate School, Worthington Intermediate/Raceland HS, Boy Scout Troop

OHIO: Clark Montessori School, Chesapeake Middle School, Cincinnati State Technical & Community College, Elizabethtown Elementary, Franklin Junior High School, Marietta HS, New Richmond HS, Single Participant

PENNSYLVANIA: Rankin Intermediate School

WEST VIRGINIA: St. Francis Xavier School, St. Michael Middle School, Wahama HS, Warwood Middle School

VIRGINIA: Committee for the Improvement of Dickenson County

# The ORSANCO Educational Foundation

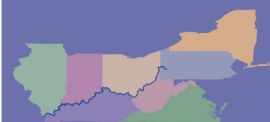
The mission of the ORSANCO Educational Foundation (OEF) is to design, manage and raise funds for Ohio River Basin educational programs that will foster an environmentally aware and responsible public. The OEF was founded in 2003 as a 501(c)3 non-profit organization. The Foundation purchased the historic sternwheeler P.A. Denny, which is home to the ORSANCO River Education Center. The River Education Center provides a unique river-based educational experience for students and teachers throughout the Ohio River Valley. The program incorporates a complete curriculum that satisfies science education standards, professional development for educators and a post-voyage community outreach



High school students collecting a water sample for analysis



The P.A. Denny, home of the River Education Center





## Staff

Alan H. Vicory, Jr., P.E., DEE, Executive Director & Chief Engineer  
Peter Tennant, P.E., Deputy Executive Director  
Tracey Edmonds, Administrative Assistant

### **Administrative Programs & Human Resources**

David Bailey, Manager of Administrative Programs & Human Resources Programs  
Donna Beatsch, Data Processing Specialist  
Joe Gilligan, Comptroller  
John Klear, Data Systems Administrator  
Jennifer Monroe, Administrative Assistant  
Paul Spires, Sr., Maintenance Specialist

### **Source Water Protection & Emergency Response**

Jerry Schulte, Manager of Source Water Protection & Emergency Response  
Lila Ziolkowski, Chemist

### **Biological & Research Programs**

Erich Emery, Manager of Research, Ohio River Users, & Biological Programs  
Jeff Thomas, Aquatic Biologist  
Matt Wooten, Aquatic Biologist  
Contractual Biological Research:  
Dan Phirman, Aquatic Biologist  
Lisa Smith, Aquatic Biologist  
Rob Tewes, Aquatic Biologist

### **Technical Programs**

Jason Heath, Manager of Monitoring, Assessment & Standards Programs  
Stacey Cochran, Environmental Specialist  
Sam Dinkins, Environmental Specialist  
Mindy Garrison, Environmental Specialist  
Eben Hobbins, Environmental Specialist  
Erin Overholt, Environmental Specialist  
Greg Youngstrom, Environmental Specialist

### **Public Information Programs**

Jeanne Ison, Manager of Public Information/Education Programs  
Melissa Mann, Public Information/Education Specialist  
Alexandra Stevenson, Publications Coordinator

### **ORSANCO Educational Foundation**

Jeanne Ison, Director  
Heather Mayfield, River Education Center Program Coordinator

### **Years of Service Awards for 2005**

Jeanne Ison—20 years  
Jeff Thomas—5 years



## Presentations, Papers and Publications

Representatives of ORSANCO give presentations to a variety of organizations through meetings and conferences, and submit professional papers relating to the Commission's role as an interstate agency conducting research and collecting data on a large river system. The following is a select list of presentations, papers, and publications for 2005.

### Presentations

"Watershed Approach to Water Quality Management in the USA," International Water Association United Kingdom Branch Annual Meeting (Alan Vicory and Tracey Mehan)

"ORSANCO's Public Information and Participation Programs: Toward Effective Water Quality Management in the Ohio River Basin in the USA," Tenth International Conference on River Basin Management (Alan Vicory and Jeanne Ison)

"Trials and Tribulations of Developing TMDLs for Dioxin and PCBs Dominated by Undefined, Nonpoint Sources in the Ohio River," the Water Environment Federation's Technical Exhibition and Conference 2005 (Sam Dinkins)

### Professional Papers and Publications

Vicory, Alan H., and Tracey Mehan. Look to the Watershed. *Water Environment and Technology*, June 2005.

Vicory, Alan H., and John Tyson. Integrated Management on a Catchment Basis – Challenges Now and in the Future. *International Water Association 2005 Yearbook*.

Applegate, Jeromy M., Paul C. Baumann, Erich B. Emery, and Matthew S. Wooten. First steps in developing a multimetric macroinvertebrate index for the Ohio River. Submitted to *River Research and Applications*.

Wooten, Matthew S., Brent R. Johnson, and Erich B. Emery. Temporal variation in Ohio River macroinvertebrates: a historical rock basket comparison (1965-1971 and 2002). Submitted to *Journal of Freshwater Ecology* – In Press.

Thomas, Jeffrey A., Erich B. Emery, and F. H. McCormick. 2005. Detection of temporal trends in Ohio River fish assemblages based on lockchamber surveys (1957-2001). Pages 431-449 in Rinne, J. N., R.M. Hughes, and B. Calamusso, editors. *Historical changes in large river fish assemblages of the Americas*. American Fisheries Society. Symposium 45. Bethesda, Maryland.

Emery, Erich B., Jeffrey A. Thomas, and T.R. Angradi. 2005. Fish. Pages 139-163 in T.R. Angradi, editor. *Environmental Monitoring and Assessment Program: Great River Ecosystems, Field Operations Manual*. U.S. Environmental Protection Agency. Duluth, Minnesota.

Lazorchak, J.M., E.B. Emery, D.M. Walters, F.H. McCormick, R. Wesselman, R.M. Hughes, and S.A. Peterson. 2005. Fish Tissue Contaminants. Pages 165-173 in T.R. Angradi, editor. *Environmental Monitoring and Assessment Program: Great River Ecosystems, Field Operations Manual*. U.S. Environmental Protection Agency. Duluth, Minnesota.

For more information on publications, contact ORSANCO





# Financial Report

## Statement of Activity Year Ended June 30, 2005

Beginning Assets July 1, 2004		\$1,437,843
Revenues		
Signatory States	\$1,260,900	
U.S.EPA	\$2,280,898	
Foundations, Industrial & Small Government Sources	\$362,318	
Fines & Settlements	\$100,000	
Interest Earned	\$22,621	
Miscellaneous Receipts	\$1,100	
Total Receipts		\$4,027,837
Subtotal		\$5,465,680
Operating Expenditures		\$4,177,922
Total Resources June 30, 2005		\$1,287,758

A detailed statement can be found in June 30, 2005 audited financial statements

## State Agencies

### Illinois

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

### Indiana

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

### Kentucky

Environmental and Public Protection Cabinet  
500 Mero Street 5th Floor, CPT  
Frankfort, KY 40601

### New York

Department of Environmental Conservation  
Division of Water  
625 Broadway  
Albany, NY 12233

### Ohio

Environmental Protection Agency  
Division of Water Pollution Control  
122 S. Front Street  
Columbus, Ohio 43215

### Pennsylvania

Department of Environmental Protection  
Bureau of Water Quality Management  
P.O. Box 2063  
Harrisburg, PA 17105-2063

### Virginia

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

### West Virginia

Department of Environmental Protection  
601 57th Street  
Charleston, WV 25304

## U.S. Environmental Protection Agency

### U.S. EPA Region 3

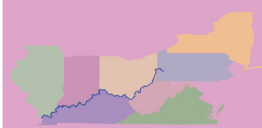
1650 Arch Street  
Philadelphia, PA 19103

### U.S. EPA Region 4

Sam Nunn Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, GA 30303-3104

### U.S. EPA Region 5

77 W. Jackson Blvd.  
Chicago, IL 60604



# Ohio River Valley Water Sanitation Commission

## ORSANCO



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