

1995 Annual Report

Ohio River Valley
Water Sanitation Commission

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 for 1995 to:

The Honorable Jim Edgar
Governor of Illinois

The Honorable Evan Bayh
Governor of Indiana

The Honorable Paul E. Patton
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



Ohio River Valley Water Sanitation Commission
5735 Kellogg Avenue, Cincinnati, Ohio 45228-1112
513/231-7719 or visit ORSANCO on the World Wide Web
at <http://www.orsanco.org/>

Members of the Commission*

Illinois

Richard S. Engelbrecht, Ph.D., Professor of Environmental Engineering, University of Illinois
Mary A. Gade, Director, Illinois Environmental Protection Agency
Phillip C. Morgan, Director, Danville Sanitary District

Indiana

Joseph H. Harrison, Sr., Bowers, Harrison, Kent & Miller
Kathy Prosser, Commissioner, Department of Environmental Management

Kentucky

James E. Bickford, Secretary, Natural Resources & Environmental Protection Cabinet
Gordon R. Garner, Executive Director, Louisville & Jefferson County Metropolitan Sewer District
Ed Logsdon, Commissioner, Department of Agriculture

New York

Douglas E. Conroe, Assistant to Vice President for Operations, Chautauqua Institution
Thomas A. Erlandson, Ph.D., Professor of Biology & Geology, Jamestown Community College
Michael D. Zagata, Commissioner, Department of Environmental Conservation

Ohio

Lloyd N. Clausing
Richard Miller
Donald R. Schregardus, Director, Ohio Environmental Protection Agency

Pennsylvania

James M. Seif, Secretary, Department of Environmental Protection
Melvin E. Hook, R&D Engineering, P.C.
William M. Kudaroski, Operations Manager/Production, Pennsylvania-American Water Company

Virginia

Henry O. Holliman, Jr., Ph.D., Department of Environmental Quality
W. Bidgood Wall, Jr., Department of Environmental Quality

West Virginia

Edgar N. Henry
L. Eli McCoy, Ph.D., Director, Department of Commerce, Labor, & Environmental Resources, Division of Environmental Protection
Ronald R. Potesta, President, Terradon Corporation

United States

Valdas V. Adamkus, Regional Administrator, U.S. Environmental Protection Agency, Region V
Robin Corathers, Executive Director, Rivers Unlimited Mill Creek Restoration Project
Phillip J. Shepherd, Attorney

Officers:

Thomas A. Erlandson, Ph.D., Chairman
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Alan H. Vicory, Jr., Executive Director and Chief Engineer

Legal Counsel

Thomas D. Heekin, Taft, Stettinius & Hollister

*(As of December 31, 1995)

Everyone's Downstream

During the summer of 1994, while driving along the shore of Chautauqua Lake, I noticed that the car ahead of me had a bumper sticker stating, "Everyone's downstream." Although my initial response was skeptical—after all, the existence of a downstream does imply an upstream—the truth of the statement soon struck home.

I recalled hiking to the source spring of the Allegheny River earlier that year, and thinking that the ground water feeding this woodland flow originated as moisture carried on the westerly winds from the nation's heartland along the Ohio River. This grand river was formed as the waters I was watching seep from the hill joined with the Monongahela's flow 352 miles downstream at Pittsburgh.

When a watershed is combined with its airshed, everyone, even those living along the uppermost headwaters, is truly downstream.

Concern for those millions living downstream along the Ohio River and its tributaries was the salient driving force in the establishment of the Ohio River Valley Water Sanitation Commission (ORSANCO) in 1948.

As Edward J. Cleary, ORSANCO's first executive director, said in his 1967 book, *The ORSANCO Story*, "Unlike many rivers which begin their journey to the sea unsullied by contact with the activities of man, the Ohio is denied an origin of pristine purity. Clustered at its source at Pittsburgh is an urban population center of 1,400,000 people as well as the most heavily industrialized zone in the valley.

Furthermore, the two tributaries that give it birth bring waters that are burdened with the waste water from upstream communities and

industries, and with the acid drainage from active and abandoned coal mines."

Now, after nearly 50 years of effort by the Commission and its members and partners, water quality in the 155,000 square miles of the Compact district are greatly improved over those observed by the farsighted authors and signers of the Ohio River Valley Water Sanitation Compact.

Ongoing activities and initiatives during 1995 continued the trend begun by their

actions. Since the beginning,

Commission activities have focused on improving water quality for downstream users. The result of this focus was highlighted during 1995 with the announcement that all publicly owned treatment facilities along the Ohio River now have, at a minimum, secondary treatment. This was a marker event in the Commission's history, showing that ORSANCO and state partnership in pollution abatement has indeed worked.

A new Commission program both complements and expands upon this historical emphasis in pollution abatement. The Watershed Pollutant Reduction Program is designed to identify and address in a comprehensive way specific pollutants known to impair various uses of the Ohio River.

Initial funding was provided by the U.S. Environmental Protection Agency (EPA). A series of informational public workshops was held during the fall, seeking public questions and suggestions. Eight priority pollutants have been selected for study, including dioxin, chlordane, atrazine, and PCBs, and program implementation is proceeding.



Periods of intense staff activity often characterize ORSANCO programs, with one example being the Cincinnati Area Wet Weather Demonstration Study begun in 1995. This study involves several components, including habitat characterization, fish and macroinvertebrate sampling, and measurement of several physical parameters during both wet and dry weather periods. Results of this study will broaden the scope of the Commission's investigation of combined sewer overflows.

Data being obtained from the Wet Weather Demonstration Study is part of an increasing effort to gain a basic understanding of the diverse dynamics of the River and its watershed. This involves research, and during 1995 the Commission adopted a Mission Statement and Strategic Plan which takes into consideration this new challenge.

The research methods commonly used for studying flowing waters were developed for smaller streams, not large waterways like the Ohio River, and the learning curve has been steep for the Commission.

These research efforts have benefited from the Biological Management Information System (BMIS), developed by funding received from the ORSANCO/Ohio River Users Program. The BMIS became operational on June 30, storing and providing biological data to anyone with computer access. ORSANCO's Internet connections

will facilitate communication, and researchers are encouraged to deposit data in this system.

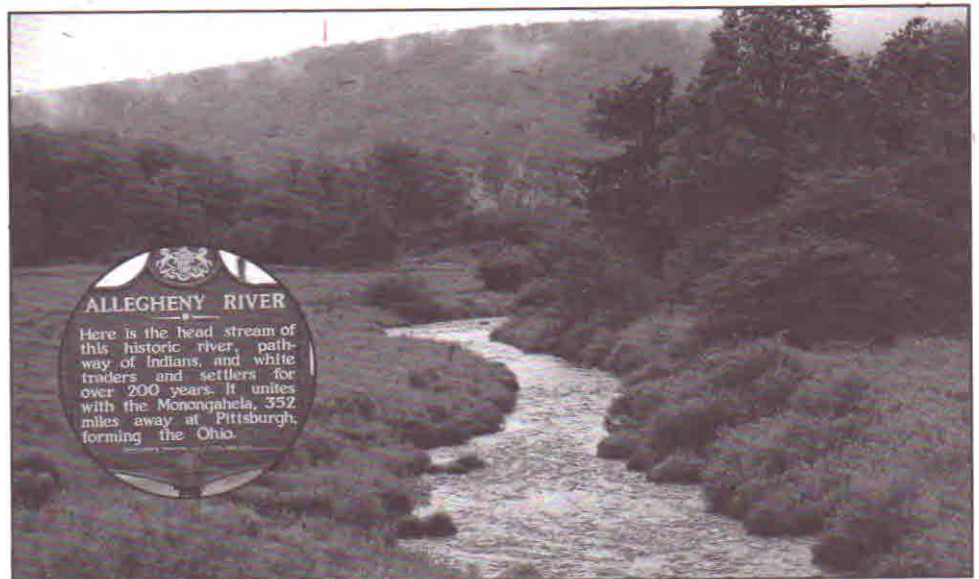
Grateful appreciation is extended to all volunteers who serve on ORSANCO committees. The work done by their members is essential to the success of Commission activities. The year 1995 saw the establishment of a new Water Quality Review Committee to help implement technical initiatives and programs that are under way. This committee has identified a set of issues to address, including reviewing ORSANCO's role in spill notification and response, following hydropower development, and providing guidance relating to quality control and assurance matters.

The Commission's Public Interest Advisory Committee has been working diligently this year to bring recognition to the Ohio River Valley's vast resources, and to ORSANCO as a steward of these treasures. While these are examples, all committees comprising the Commission's "family" have put their mark on 1995, contributing to the achievement of better water quality in the Ohio River Valley.

Finally, with ORSANCO's 50th anniversary approaching, an ad hoc committee has begun planning events to celebrate this milestone in the Commission's history—one rich with the understanding that a cleaner Ohio River Valley has positive affects on everyone downstream.

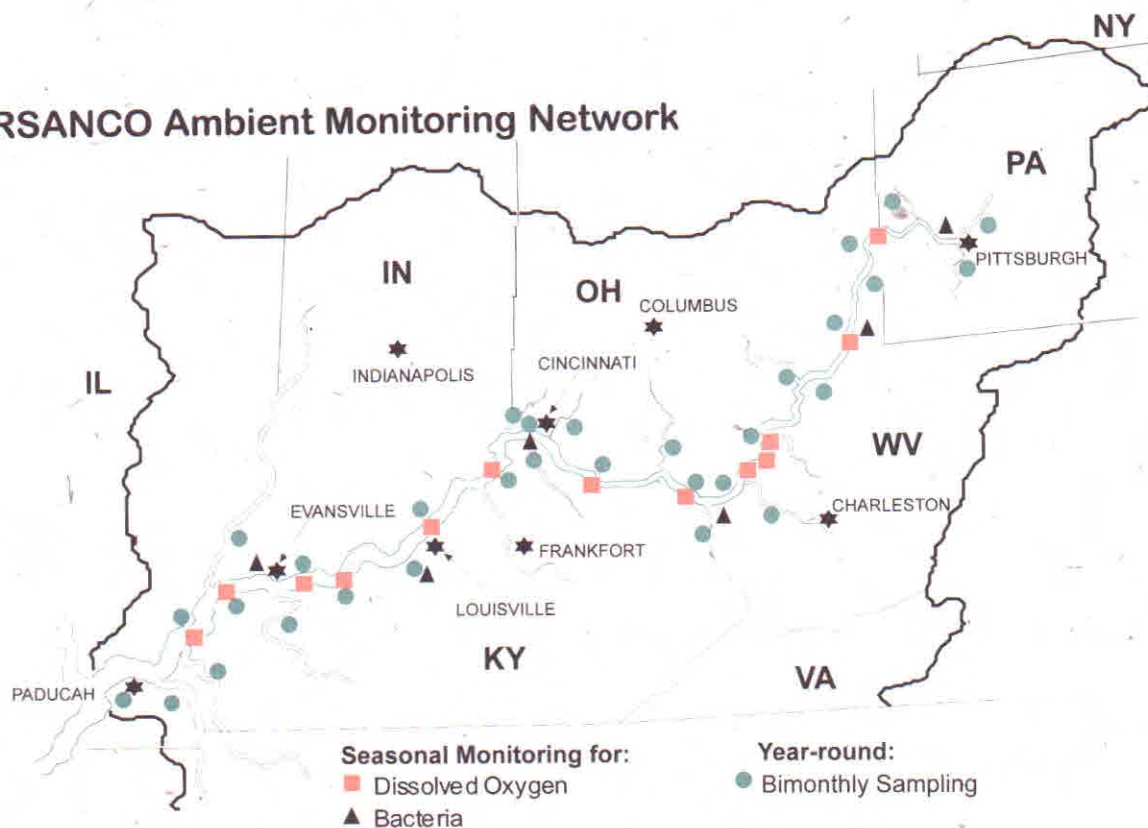
Thomas A. Elandson

The young Allegheny River east of Coudersport, PA travels 352 miles where it joins the Monongahela River to form the Ohio River.



Water Quality Monitoring

ORSANCO Ambient Monitoring Network



For nearly 50 years, the Commission has monitored for certain pollutants that impact uses of the Ohio River. These uses include its availability as a safe public and industrial water supply after reasonable treatment, suitability for recreational usage, and capability of maintaining a healthy and abundant biological community.

Data received from these monitoring activities determine if water quality objectives established for these uses are being met. To consolidate efforts, states bordering the Ohio River have delegated responsibility for monitoring the main stem and lower reaches of several major tributaries to ORSANCO.

In 1995, the Commission's water quality monitoring activities included year-round bi-monthly sampling for the presence of selected chemical and physical characteristics, yearly biological assessments, and seasonal bacteria and dissolved oxygen monitoring during warm weather months.

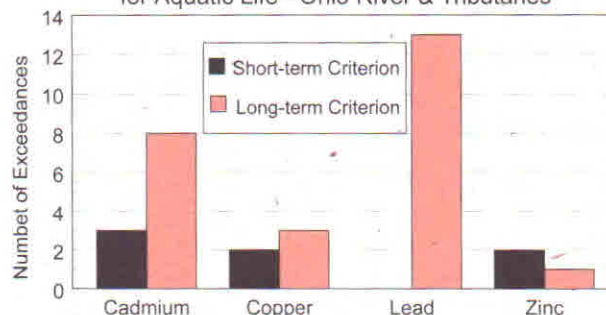
Year-round Bimonthly Sampling

The Bimonthly Sampling system consists of 31 stations, 17 on the Ohio River and 14 on major tributaries, where samples are collected and analyzed for specific physical properties and

chemical constituents. The Commission has adopted water quality criteria for selected toxicants to protect human and aquatic life.

While good water quality was observed at most sites during 1995, cadmium and lead exceeded the criteria at several sites. No exceedances were observed for chromium or mercury.

1995 Exceedances of ORSANCO's Criteria for Aquatic Life - Ohio River & Tributaries



Short-term Criteria: highest in-stream concentrations of toxic substances to which organisms can be exposed for a brief period of time without causing unacceptable harmful effects.

Long-term Criteria: highest in-stream concentrations of toxic substances to which organisms can be exposed indefinitely without causing unacceptable harmful effects.

Exceedances based on 176 samples (cadmium, copper, zinc) and 169 (lead)

Seasonal Monitoring

Bacteria Monitoring

From May through October, the Commission monitors the Ohio River for the presence of certain bacteria which may increase health risks for those having contact with the water while swimming, boating, or fishing. ORSANCO has established criteria for two forms of bacteria, fecal coliform and *E. coli*, and collects samples five times monthly at six stations. These stations are located downstream of major Ohio River cities—Pittsburgh, PA; Wheeling, and Huntington, WV; Cincinnati, OH; Louisville, KY and Evansville, IN—where bacteria levels may generally be highest due to pollution impacts associated with urban areas.

During 1995, the Commission received additional bacterial data from water treatment plants, with a total of eight plants providing fecal coliform data for this monitoring program.

Results for the year indicated continuing problems with elevated bacteria levels at all six ORSANCO stations. Exceedances of the Commission's contact recreation criteria occurred in 92 percent of the monthly comparisons. However, no violations of criteria to protect public water supply were recorded.

ORSANCO studied data accumulated over a three-year period from these six sites, comparing the data with specific weather-related influences such as temperatures, precipitation, river stage and flow rates. Results indicated no direct correlation between bacteria exceedances and these factors. However, combining ORSANCO's data with that from the water treatment plants indicates that levels downstream of urban areas are much higher than those upstream.

Dissolved Oxygen Monitoring

The Commission monitors dissolved oxygen levels to determine if the Ohio River is capable of supporting a diverse aquatic community. From May through October, ORSANCO receives data from monitors operated by the U.S. Army Corps of Engineers and hydropower plants at 13 navigational dams.

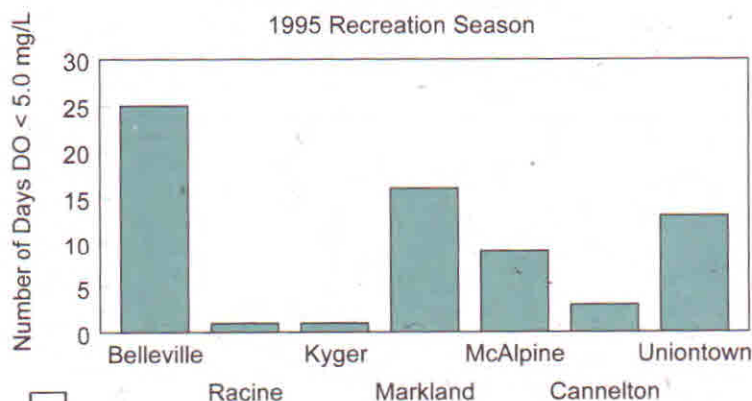
Because of continuing problems with low dissolved oxygen concentrations at locations in the Lower Ohio River, in 1994 the Commission met with state and federal regulatory agencies, hydropower representatives, and the Corps to explore a resolution for this problem. As a first step, aeration studies will be conducted by the Corps and ORSANCO in 1996 to determine what effect, if any, hydropower operations have on dissolved oxygen levels.

Low flow conditions and warm temperatures during the summer of 1995 contributed to depressed levels of dissolved oxygen at several locations.

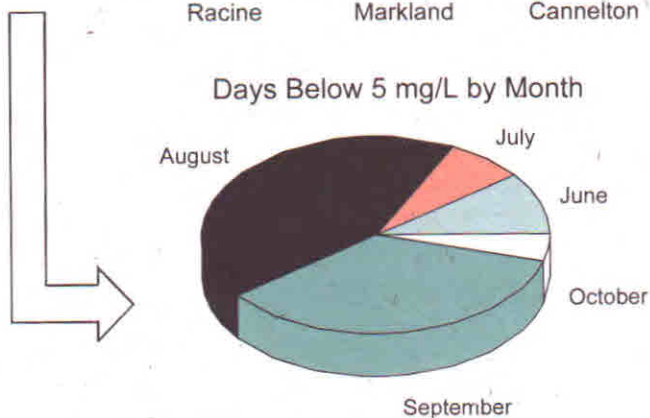
Ohio River Dissolved Oxygen (DO) Levels

Below Commission Standards

1995 Recreation Season



Days Below 5 mg/L by Month

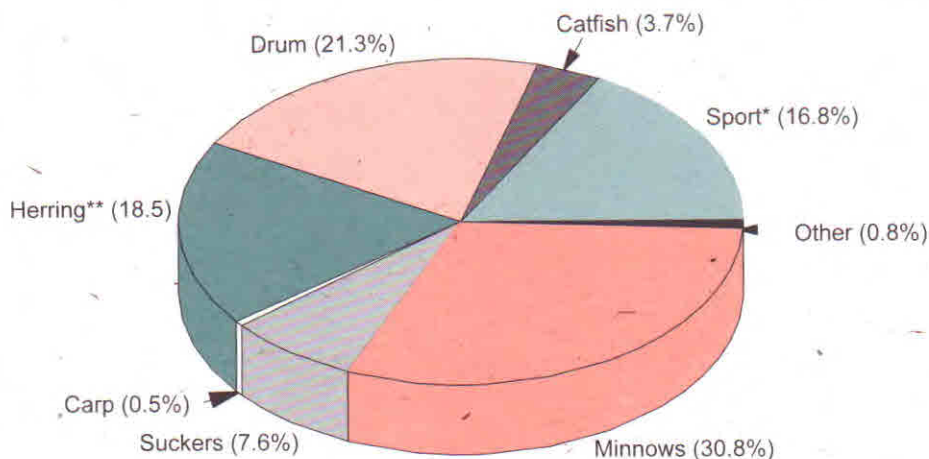


All monitoring locations are at locks and dams except Kyger, which is a power plant. Commission Standards require an average of 5mg/L of dissolved oxygen per day to protect aquatic life.

Yearly Biological Assessments

Results of 1995 Markland Fish Population Survey

Fish collected by electrofishing



* Sport fish include bass, crappie, sunfish, sauger, saugeye, walleye.
** Herring include gizzard shad, threadfin shad and skipjack herring

To determine the extent to which the Ohio River supports a healthy aquatic community and to measure the effectiveness of pollution control programs on the biological community, ORSANCO conducts yearly fish and macroinvertebrate population surveys and a fish tissue contaminants program.

Recently, ORSANCO initiated a more comprehensive program for biological assessment that incorporates habitat requirements, the availability of food and other factors influencing these communities into the Commission's traditional biological studies. Highlights of the 1995 biological assessments include the following:

Macroinvertebrate Sampling

Macroinvertebrates, which include aquatic insects, crayfish, mollusks, and worms, are important indicators of water quality and serve as a food source for many fish species.

ORSANCO evaluated methods for collecting macroinvertebrates during the 1995 fish population surveys in the Markland pool by comparing the Commission's methods with those of other organizations. If such methods are comparable, combined databases will expand existing knowledge for this segment of the aquatic community.

Fish Population Surveys

Lockchamber Studies

During 1995, lockchamber surveys were conducted at nine dams along the Ohio River to acquire fish population data, and to collect tissue for the Commission's fish contaminants program. Data from these population surveys will be used for trend analysis.

Greenup Pool

This 61-mile stretch in the upper Ohio River from the Robert C. Byrd (Gallipolis) Dam to the Greenup Dam was revisited for the third consecutive year as part of a multi-year effort to develop better assessment methods applicable to large-river systems. ORSANCO will evaluate the results and produce a comprehensive report from the data collected during six separate samplings at six sites over the three years. The report will be completed in 1996.

Markland Pool

In the Markland Pool, from the Meldahl Dam to the Markland Dam, ORSANCO surveyed weekly at eight sites from June through October. Methods used in this survey were developed to gain a better understanding of the influences that physical environmental factors, such as river flow and conditions, and specific habitat characteristics have on fish populations within this pool.

Fish Tissue Contaminants Study

Since 1975, ORSANCO has analyzed the tissue of certain fish for the presence of selected contaminants, including chemicals, pesticides and metals. Past results indicate river-wide contamination in some species, particularly carp and catfish, from polychlorinated biphenyls (PCBs) and chlordane.

Based on the data from the Commission and other agencies and organizations, states along the Ohio River issue consumption advisories for certain species of fish. The following Ohio River consumption advisories were in effect for 1995:

Pennsylvania

channel catfish, carp - no consumption

Ohio

channel catfish from PA border to Greenup Lock & Dam - no consumption

channel catfish from Cincinnati area, white bass from PA border to Greenup Lock & Dam - no more than one meal per month

sauger - no more than one meal per week

West Virginia

channel and flathead catfish - no consumption

Kentucky

channel catfish, carp, white bass, paddlefish and their eggs - no consumption

Indiana

channel catfish over 17 inches
carp over 25 inches - no consumption

carp from 15 to 25 inches, channel catfish from 15 to 17 inches - no more than six meals per year

Illinois

No Ohio River advisories

During biological surveys, fish are collected by electrofishing—a method where fish can be identified, weighed, measured, and returned to the water alive. ORSANCO crews fish at night near the shorelines when the fish are actively feeding. Using a power generator, an electrical field is placed around the boat. Fish swimming into the field are immobilized and gathered for identification. In 1995, the Commission caught approximately 15,000 fish by this method.

Biological Management Information System (BMIS)

In 1994, the Commission authorized the use of funds from the ORSANCO/Ohio River Users Program to support development of an electronic management information system that would serve as a clearinghouse for Ohio River biological data.

Educational institutions, private consultants, and regulatory agencies have collected vast amounts of data from Ohio River biological studies. While this data exists in varying formats, most is not available for general distribution and for data sharing among such organizations.

ORSANCO's BMIS, which went on-line June 30, 1995, encourages Ohio River users and researchers to deposit biological data into this system, and consolidates such information into a consistent and usable format for any agency or organization.

Because this BMIS provides the opportunity for data sharing among all Ohio River researchers, regulators, and consultants, it should promote a more comprehensive understanding of this unique resource, and ultimately lead to the development of regulations appropriate and specific for the protection of the Ohio River biological community.

Early morning fishing on the fog-shrouded Ohio River near Ashland, KY



Combined Sewer Overflow Abatement

Historically, Commission programs have focused on the control and reduction of pollution from point source discharges to the Ohio River. With the establishment of ORSANCO's Pollution Control Standards and application of these Standards by the member states through National Pollutant Discharge Elimination System permits, many of these point sources have been controlled.

One point source contributing pollution to the Ohio River and its tributaries is from combined sewer overflows (CSOs). These discharges occur when storm water runoff from rainfall or snow melt mixes with waste water, causing the waste water sewer to overload. This releases untreated or partially-treated waste containing bacteria and other contaminants to the waterways.

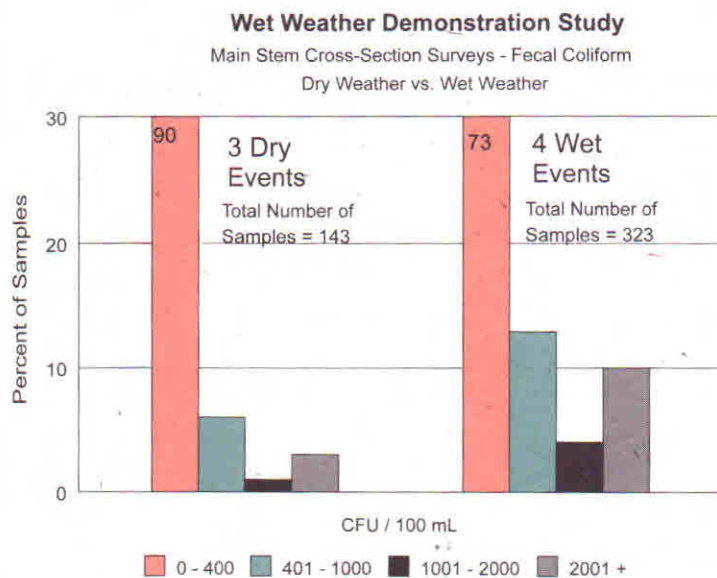
To address this problem, the Commission, state agencies, U.S. EPA, and local waste water

treatment utilities convened to identify the Commission's role in CSO abatement and develop a strategy for reducing CSO impacts on Ohio River water quality.

A strategy, initially adopted by ORSANCO in 1993, was revised in September 1995 subsequent to discussions at a June public workshop. This workshop was convened to investigate various CSO monitoring activities and their results. Strategy changes were directed at certain mandated monitoring activities that the Commission deemed unnecessarily restrictive.

Revisions to the strategy reflected results of studies which showed bacteria levels upstream of CSOs in urban areas are lower under wet weather conditions, indicating that the effects of other storm-related sources may have a greater impact than anticipated.

Cincinnati/Northern Kentucky Wet Weather Study



As part of its role in CSO abatement, ORSANCO coordinates water quality impact studies along the Ohio River. In 1994, the Commission completed studies on the River's biological community in Wheeling, West Virginia and bacteria concentrations in Hun-

tington, West Virginia as part of a demonstration study on monitoring CSO impacts.

During 1995, ORSANCO, with funding from U.S. EPA, Cincinnati Metropolitan Sewer District, Northern Kentucky Sanitation District #1, and Cincinnati Water Works, initiated a two-year wet weather water quality impact study in the Cincinnati/Northern Kentucky area. This study investigates CSOs and nonpoint sources under both wet and dry weather conditions. A significant goal of this study is to develop techniques for monitoring wet weather impacts on the Ohio River, while developing a mathematical simulation model which communities nationwide could adapt to evaluate water quality problems in other large river systems.

Intensive in-stream sampling on the Ohio River and four tributaries in the Markland Pool (between the Meldahl and Markland Dams) were conducted in 1995 as part of this model development.

The Commission will complete the study in 1997.

Watershed Pollutant Reduction Program

In recent years, the "watershed" approach to addressing pollution has come to the forefront, with interstate organizations, such as OR-SANCO, spearheading initiatives for water quality improvement on a watershed basis.

Under the guidance of a steering committee, and with initial funding from U.S. EPA, OR-SANCO designed a Watershed Pollutant Reduction Program in 1995 to generate information for reducing levels of pollutants which impact the quality of Basin waterways, and which may ultimately affect downstream watersheds.

Important components of this program include determining the severity and extent of pollution, and identifying possible sources; determining reductions of pollutants necessary to achieve specific water quality objectives; and developing a coordinated strategy to achieve these reductions. One principle of the program is that implementation of the resulting controls will be accomplished without creation of new regulatory structures.

During 1995, the Commission held four workshops in communities along the Ohio River to receive public input which would assist in the selection of pollutants for study. In response to public concerns, the Commission developed a list of initial pollutants. *See list at right.* The presence of two substances, PCBs and chlordane, have resulted in the issuance of Ohio River fish consumption advisories. ORSANCO will seek funding for continuance of the program, and encourage public interest and participation.

Pollutants Targeted For Watershed Study

Atrazine

Pesticide causing human health concerns in drinking water supply

Chlordane

Banned pesticide found in Ohio River fish tissue, toxic to humans

Dioxin

Substance found in Ohio River fish tissue, extremely toxic to humans even at low concentrations

Lead/Copper

Metals with potential threat to drinking water supply and aquatic life

Nitrogen/Phosphorous

Nutrients causing taste and odor problems in drinking water, potential threat to aquatic life

Polychlorinated biphenyls (PCBs)

Banned substance found in Ohio River fish tissue, toxic to humans

The Tennessee River, one of the largest Ohio River tributaries, flows into the main stem near Paducah, KY.



Pollution Control Standards

Contaminants released into rivers and streams often cause problems downstream of where they entered the waterway. To improve Ohio River water quality, in 1951 the Commission adopted Pollution Control Standards, which required municipalities and industries to treat their effluents prior to being discharged to the Ohio River.

The Commission's Standards establish water quality criteria to ensure that specific uses for the Ohio River are achieved and maintained. In 1970, the Commission Standards were revised to require more advanced treatment.

Triennial Review

To keep pace with current knowledge and contemporary issues, ORSANCO conducts a triennial review of the Standards.

As part of this review, in 1995 the Commission convened public workshops to discuss water quality concerns of Basin citizens, municipalities and industries, and concluded a formal comment period. Among issues under consideration are inclusion of a definition for combined sewer overflows, revisions to the definitions of sewage and toxic wastes, and additional criteria for constituents regulated under the Federal Safe Drinking Water Act that are not addressed in the current Standards. The review will culminate in 1996 with adoption of the revised Standards.

Tracking List for Dischargers

ORSANCO maintains a list of facilities that have prior problems complying with the Standards, or those having high-volume discharges (greater than 10 million gallons of waste water per day) which could seriously impact the Ohio River's water quality. For these facilities, the Commission monitors the quality of their effluent to determine if it is in compliance with permit limits for their discharges.

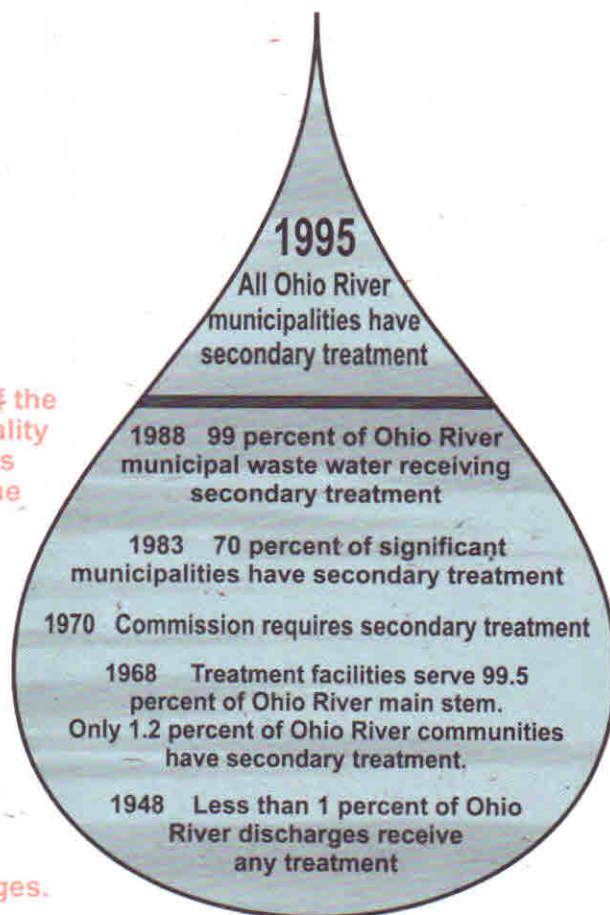
During 1995, 15 high-volume and 8 compliance problem facilities were tracked for compliance. One facility with high-volume discharges recorded no effluent violations.

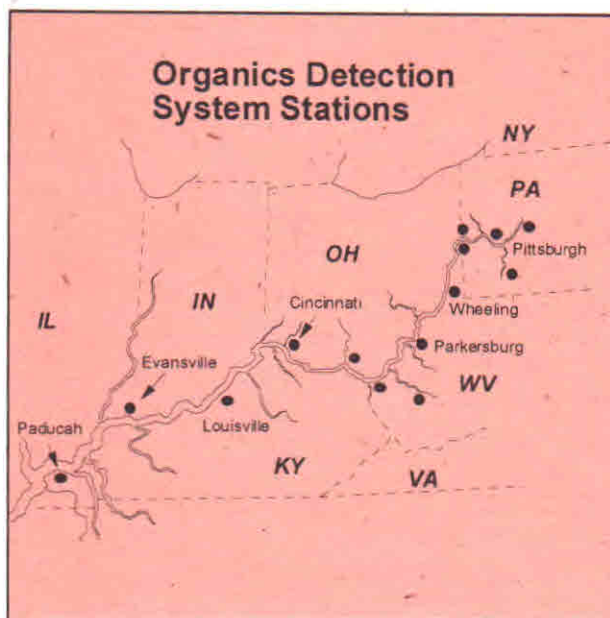
When compliance becomes an issue of concern, the Commission possesses enforcement powers to ensure that discharges meet requirements of the Standards. During 1995, ORSANCO, in conjunction with U.S. Environmental Protection Agency (EPA) and Ohio EPA, was party to consent orders for the Village of Wellsville, Ohio and the Cincinnati Metropolitan Sewer District-Mill Creek Sewage Treatment Plant.

Ohio River Reaches Milestone in Waste Water Treatment

One of the principal goals of the Compact is to improve water quality by controlling effluent discharges in the Ohio River Valley. When the Commission was created in 1948, less than one percent of municipal and industrial waste water received treatment prior to being discharged to the Ohio River.

In 1995, all Ohio River communities reached compliance with the Commission's current Pollution Control Standards requiring not only primary treatment, but more advanced secondary treatment for discharges.





Spill Detection and Response

The Ohio River is used extensively by industries and utilities for manufacturing, transportation and power generation. As a consequence of these activities, spills and accidental discharges can and do occur. In some instances, harmful substances are released, creating potential hazards for aquatic life and downstream water users.

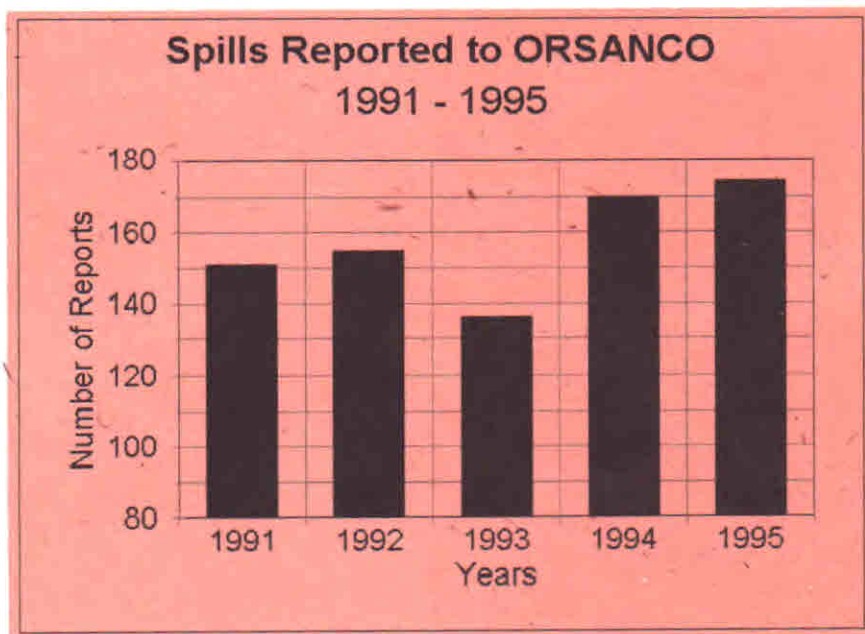
Because of the interstate nature of such events, the Commission plays an important role in coordinating response activities among federal, state and local organizations. Key to this response is the notification of downstream water users when a spill occurs.

Organics Detection System

Since 1978, ORSANCO, in cooperation with Ohio River water utilities and industries, has operated an Organics Detection System (ODS) to monitor daily for the presence of selected organic chemicals which may pose a threat to public water supplies. The Commission provides 24-hour telephone emergency response and reports spills electronically on a bulletin board. If a potentially harmful substance is detected at one of the 14 ODS stations, ORSANCO provides prompt notification to downstream water users.

In an ongoing effort to keep pace with advanced technology, ODS communications capabilities have been enhanced with new computer software and modems, allowing stations to process, store and forward results directly to ORSANCO and other stations.

In March 1995, the Commission met with state and federal emergency response coordinators for the Ohio River to discuss spill notification plans and to review current procedures. A revised manual will be completed in 1996.



Nonpoint Source Pollution Abatement

As pollution from Ohio River industrial and municipal discharges, or point sources, has been successfully controlled through installation and operation of waste water treatment facilities, another source of pollution, that from nonpoint sources, has been identified as the greatest contributor to water quality problems today.

Nonpoint sources, which include runoff from agricultural lands, atmospheric deposition, mine drainage, hydrologic and habitat modification, urban runoff, land disposal, silviculture and construction, are generally associated with land



use activities. Types of pollutants vary, with siltation being the leading cause of nonpoint source pollution (NPS) impacts in rivers nationwide. Other NPS pollutants include nutrients, pathogens, pesticides, and metals. Historically, pathogens, pesticides, and metals have been a problem in the Ohio River.

In 1993, a Task Force was formed to help define the Commission's role in developing a strategy for abatement of pollution from non-



Nonpoint Source Pollution Abatement Strategy Highlights

Primary Goals:

Determine the degree to which NPS pollutants affect Ohio River water quality

If a problem exists, achieve a coordinated valley-wide approach to abate NPS pollution

Involve the public in the NPS abatement decision-making process

point sources. Task force members from Basin industries, agencies and organizations presented a Nonpoint Source Pollution Abatement Strategy in 1995 that was adopted by the Commission in May.

The Commission conducted investigations to determine if water quality impairments exist as a result of nonpoint source pollutants, and if they do exist, to what degree they impair water quality of the Ohio River.

Data collected by federal, state, municipal and private organizations throughout the Basin will be used in determining if exceedances of ORSANCO's criteria are a result of nonpoint source pollution. Data resulting from several ongoing Commission projects and programs, including geographical information on pesticide use, abandoned mines, and acid mine drainage, will aid in identifying problems attributed to nonpoint sources.

Subsequent actions by the Commission will include investigations to identify the pollutants' origins and the amount of pollutants entering the Ohio River from tributaries. If a problem does exist, ORSANCO will work toward achieving a valley-wide coordinated approach among efforts to abate nonpoint source pollution.

This will be accomplished through the states' existing NPS programs.

Special Projects and Studies

Pesticide Survey of the Lower Ohio River and Its Tributaries

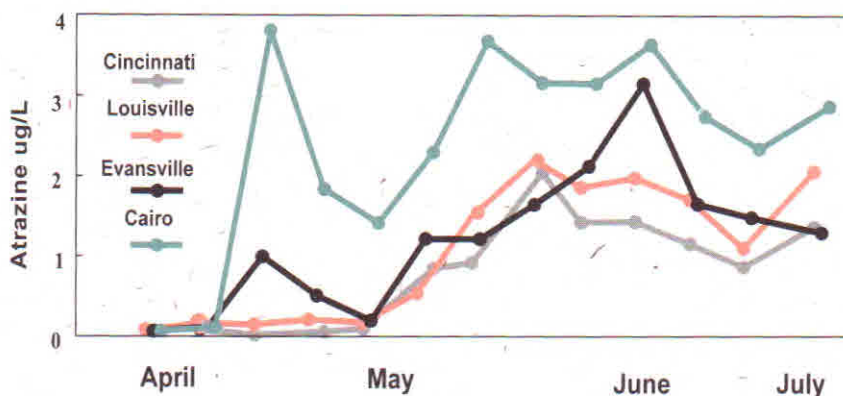
The Commission strives to achieve and maintain specific water quality objectives to ensure that the Ohio River can be used as a public water supply. However, due to the various land and water uses in the Ohio River Basin, contaminants can threaten water quality.

In 1994, the Commission responded to detections of certain pesticides in the lower Ohio River at drinking water intakes by initiating investigations into possible sources of the pesticide atrazine. Results indicated that atrazine was the most used herbicide in the lower Ohio River Basin, and from Cincinnati, OH to Cairo, IL, some tributaries contributed significant amounts of this pesticide to the Ohio River. This prompted ORSANCO to conduct additional studies in 1995.

For 13 weeks in the spring of 1995, the Commission collected samples weekly from 10 Ohio River intakes and biweekly from 29 major tributary intakes. In comparison to levels shown from long-term atrazine monitoring at Louisville and Evansville, and results from 1993 and 1994, the data acquired in 1995 indicated moderate atrazine levels.

Results showed that less than 10 percent of atrazine found in the Ohio River originates from

1995 Atrazine Concentrations at Selected Ohio River Intakes



sources upstream of Cincinnati. Concentrations increase downstream, with Cairo experiencing the highest levels. The Wabash River was listed as the greatest contributor, adding approximately 30 percent of total atrazine loads to the Ohio River.

Recommendations to the states from the Commission include establishing priority watersheds for abatement. Because routine treatment techniques are relatively ineffective in removing atrazine from river water, and its removal requires additional treatment, ORSANCO will provide early warning to water users when atrazine levels approach the maximum levels established to protect human health. A full report of this survey will be completed in 1996.

Basinwide Assessment

In 1994, ORSANCO participated in a national task force to recommend uniform guidelines for reporting water quality data.

As a result of this involvement, the Commission was asked to conduct a basinwide assessment demonstration study and produce a report, which would serve as a prototype for watershed-based reporting in the National Assessment of Water Quality Conditions. This report, required by Section 305(b) of the Federal Clean Water Act, is submitted by U.S. EPA to Congress as a

national assessment of water quality conditions in each state. ORSANCO monitors and assesses the Ohio River for the six main stem states.

The demonstration study project consists of three phases, which include data collection, data assessment, and report generation. In 1995, the Commission completed all phases of the project, and forwarded a draft copy to its member states for comment prior to submittal for inclusion in the national report.

ORSANCO

/Ohio River Users Program

1995 ORSANCO/ Ohio River Users Financial Contributors

American Commercial Barge Lines
American Electric Power Service Corp.
Cincinnati Water Works
Dayton Power and Light
Dow Corning Corp.
Elf Atochem North America, Inc.
Evansville Indiana Water & Sewer Utility
Greater Cincinnati Marine Service, Inc.
Inland Marine Service
ITW Signode Consumable Products Operations
Kenton County Water District No.1
Koppers Industries, Inc.
Mead Johnson Nutritional Group
Municipal Authority of the Borough of West View
The Ohio River Company
ORMET Primary Aluminum Corp.
Paducah Water Works
Weirton Steel Corporation
Whirlpool Corporation Evansville Division

The Commission recognizes a critical need to expand the Ohio River scientific data base to insure that development of future regulations is based on the best information available.

With this in mind, in 1992, the Commission initiated efforts to identify additional sources of funds which would be used to support studies and projects that were beyond the scope of existing funding levels. Resulting from this investigation was the development in 1993 of the ORSANCO/Ohio River Users Program, which provides a mechanism for water users to recommend needed studies or projects, and in turn, provides financial support to the Commission.

A first project 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 (BMIS), created an on-line information retrieval system storing Ohio River biological data which can be used by government agencies, private individuals, researchers, and industries. The system went on line June 1995. Topics for future projects are under discussion by the program's advisory committee.

To increase awareness of this program with potential contributors and participants, in 1995 the River Users Advisory Committee hosted a series of regional meetings at six locations along the River.

Commission on the World Wide Web

The Commission broadened its reach in 1995 when it entered cyberspace. On ORSANCO's home page on the world wide web, visitors can learn about many Commission programs and special projects, including water quality assessments, emergency response, the Ohio River Sweep, and RiverWatchers. This home page also provides links to other water quality agencies and research organizations.

ORSANCO's home page can be viewed at <http://www.orsanco.org/>



Public Information and Education

The Commission strives to increase public interest in and awareness of issues concerning the Ohio River by participating in various river-related public events, providing presentations, and through its publications.



1995 Ohio River Sweep Poster Contest Grand Prize winning entry created by Mark Politz, a first grade student at Worthington Elementary School in Parkersburg, WV

Ohio River Sweep

Since 1989, ORSANCO, in partnership with Ashland Inc., state environmental agencies and Valley businesses and industries, has organized thousands of volunteers to clean up litter from the banks of the Ohio River. Each year, the Ohio River Sweep—one of the largest environmental events of its kind in the nation—has grown to include more participants and, in recent years, has included cleanups on several tributaries in addition to the main stem.

On June 17, 1995, the award-winning Sweep involved more than 19,000 volunteers collecting trash at sites in 74 counties bordering the Ohio River. Among this event's recognitions are various state awards, four national Take Pride in America awards presented by the U.S. Department of the Interior, and a Community Action Network Media Award.

In 1994, ORSANCO added a new dimension to the Sweep by sponsoring a poster contest, which is open to kindergarten through 12th-grade students in counties bordering the River. Judges selected 15 winners from nearly 1,700 creations in the 1995 contest. The winner in each grade was presented a \$100 U.S. Savings Bond, with \$500 to the runner-up winning poster. The grand prize winner received a \$1,000 Savings Bond and a cash award for the school's art department.

1995 Ohio River Sweep Corporate Contributors

Accordia Rauh
American Commercial Lines
American Electric Power
ARCO
Ashland Inc.
BASF
Bayer
BFI
CINergy Foundation
Dow Corning
DuPont
Duquesne Light
Elf Atochem NA
GE Plastics
Jantzen
Louisville Gas & Electric
Louisville Water Co.
McAlpins
Neville Chemical
North American Stainless
Procter & Gamble
U.S. Steel
Wheeling-Pittsburgh Steel
Weirton Steel

Tall Stacks

River festivals and celebrations are important links to the Ohio River's cultural past. One event that draws millions of sightseers to the River is Cincinnati's Tall Stacks Festival, a five-day event showcasing paddle wheel boats that were once frequent travelers on this historic waterway.

All aspects of river life are highlighted, including displays of wildlife that call the Ohio River home. In 1995, thousands of viewers were treated to ORSANCO's fish tank, a 5,500 gallon aquarium stocked with more than 15 different indigenous species. Through participation in events, such as Tall Stacks, ORSANCO increases awareness of the abundant Ohio River aquatic life, and ultimately, assists in the protection of these valuable resources.

1995-96 RiverWatchers Groups

Paul Blazer High School, Ashland, KY	Moundsville Junior High School, Moundsville, WV
Buckeye Local High School, Rayland, OH	Owensboro High School, Owensboro, KY
Daviess County Middle School, Owensboro, KY	Perry Traditional Academy, Pittsburgh, PA
Evansville Day School, Evansville, IN	Ripley Elementary School, Ripley, OH
Harmar Elementary School, Marietta, OH	River Ridge Intermediate School, Villa Hills, KY
Hancock County High School, Lewisport, KY	Shawnee High School, Louisville, KY
Highlands Group-Sierra Club, Ashland, KY	Taylor High School, North Bend, OH
Lawrenceburg High School, Lawrenceburg, IN	Vandevender Junior High School, Parkersburg, WV
Marietta Middle School, Marietta, OH	Wahama High School, Mason, WV
Marietta High School, Marietta, OH	Warwood Middle School, Wheeling, WV
Massac County High School, Metropolis, IL	

RiverWatchers Volunteer Monitoring Program

The RiverWatchers volunteer monitoring program, initiated in 1992 as a pilot project with five groups in three states, invites students to monitor water quality of the Ohio River or selected tributaries in their communities. During the monitoring year, groups collect samples monthly from their designated site and conduct chemical tests to determine their waterway's health. Some groups also study segments of the biological community at their sites. The Commission evaluates RiverWatchers' data, using groups as "watchdogs" in areas where ORSANCO does not conduct routine monitoring activities.

The success of the pilot project spurred the Commission to expand the program over the past three years by including more participants at locations in all six main stem states.

In 1995, 21 groups participated in the RiverWatchers program, with volunteer monitoring activities occurring on the Ohio River and five tributaries. During the past year, ORSANCO initiated development of a computer program which all groups could use to electronically transmit their data to the Commission offices, and RiverWatchers joined the world wide web with their own page that details the program, participants and sites.



Students from Shawnee High School in Louisville, KY conducting water quality tests on the Ohio River



Vandevender Junior High School students from Parkersburg, WV collect Ohio River water for testing.

Administrative Year in Review

Officers Elected

In 1995, Thomas A. Erlandson, Ph.D. of New York was elected chairman and Richard Miller of Ohio was elected vice chairman. William M. Kudasoski of Pennsylvania was elected secretary and Richard L. Herd of the Commission staff was elected treasurer for the period July 1, 1995 through June 30, 1996.

Strategic Plan Adopted

During 1995, the Commission developed an action-oriented Strategic Plan for ORSANCO, one based on directives of the Compact and strategic objectives adopted in 1988. In May, the Commission approved the five-year plan, which would place ORSANCO, in consultation with the member states, into a proactive leadership role on national and regional water management issues of importance to the Ohio River Basin. Using a watershed approach, the Commission will continue to develop and implement water quality programs.

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 municipal waste water treatment departments or districts in the Ohio River 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.

New Committees Formed

During 1995, the Commission created two new committees to assist in achieving specific goals for the Commission. A Congressional Liaison Committee is comprised of nine members, one from each signatory state and one federal representative. This committee assists in educating members of the Congress and the Executive Branch concerning the Ohio River Valley Water Sanitation Compact and its objectives, and the programs, concerns and resource needs of the Commission.

A Water Quality Review Committee was created in May to define actions necessary for achieving solutions to water quality problems. The Committee identifies agencies or organizations needed to implement these initiatives, and monitors progress of such actions. Included on this committee are the chairs of the Commission's Technical and Pollution Control Standards Committees.



View of the Ohio River
from Aurora, IN

Staff

Donna M. Beatsch *Computer Operator*

L. Dane Boggs *Data Systems Administrator*

Isabel E. Caputa *Environmental Chemist*

Samuel A. Dinkins *Environmental Specialist*

Geoffrey M. Edwards *Environmental Specialist*

Erich B. Emery *Aquatic Biologist*

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 *Technical Programs Secretary*

Jeanne Jahnigen 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 and Chief Engineer

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. These charges are waived for requests from educational institutions, government agencies and nonprofit organizations. In 1995, the following publications were produced:

ORSANCO 1994

Annual report of activities during 1994

Quality Monitor

Semiannual publication of data summaries from the Bimonthly Sampling and Bacteria Monitoring 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

The ORSANCO Outlook

A newsletter published periodically with general information on water quality conditions and the activities of the Commission

"What's a River Worth?"

A brochure developed from the full report, which overviews the role and cultural, environmental and economic impact of the Ohio River

RiverWatchers

A newsletter for participants in the Commission's volunteer monitoring program

Science Fair Projects for the Ohio River and Its Tributaries

A compilation of 23 water-related experiments or activities for students in grades four through twelve that can be applied to the Ohio River or local waterways

Technical Reports:

A Strategy for Nonpoint Source Pollution Abatement on the Ohio River

A plan for achieving a coordinated valley-wide approach for the abatement of pollution from nonpoint sources

Financial Report

SUMMARY OF RESOURCES AND EXPENDITURES

EXTRACTED FROM THE AUDIT REPORT
OF ROBERT HALL & ASSOCIATES
FOR THE 1995 FISCAL YEAR

RESOURCES

Beginning Balance - July 1, 1994 \$498,974

State Resources

Illinois	\$47,300
Indiana	\$179,100
Kentucky	\$196,100
New York	\$9,700
Ohio	\$245,700
Pennsylvania	\$127,900
Virginia	\$33,900
West Virginia	<u>\$100,200</u>

Total State Resources **\$939,900**

Federal Resources

U.S.EPA, Water Pollution Control Assistance	\$340,527
U.S.EPA, CSO Investigations, Basinwide Assessment	\$128,874
U.S.EPA, Land Use Survey	\$7,443
U.S.EPA, Wet Weather Impacts Study	<u>\$28,285</u>

Total Federal Resources **\$505,129**

Other Income

Pennsylvania Support of Upper River Study	\$327,781
Contributions in Support of the Ohio River Sweep	\$151,200
Contributions to the ORSANCO/Ohio River Users Program	\$86,400
Local Support of Wet Weather Impacts Study	\$100,000
Receipts as a Result of Fines or Settlements	\$40,910
Miscellaneous Other Receipts	\$37,999
Interest Earned on Deposits	<u>\$18,127</u>

Total Resources Available for Programming **\$2,706,420**

EXPENDITURES

Basic Water Pollution Control Program\$1,087,599

Special Projects

Organics Detection System	\$145,560
Ohio River Sweep	\$117,122
Upper River Recreational/Aquatic Habitat Study	\$265,736
CSO Investigations & Basinwide Assessment	\$156,193
Biological Information System	\$14,097
ORSANCO/Ohio River Users Program	\$12,092
Land Use Survey	\$8,266
Wet Weather Impacts Study	\$56,571

Total Special Projects Expenditures\$775,637

Equipment Depreciation Assessment(\$57,305)

Disbursements from Escrow Account (1)

Equipment & Supplies \$54,915

Contractual Expenses \$7,000

Total Escrow Account Expenditures \$61,915

Total 1995 Fiscal Expenses\$1,867,846

Ending Resources - All Activities\$838,574

(1) The Commission maintains an Escrow Account into which fines, settlements, non-federal funds and charges for equipment depreciation may be placed. Disbursements from the account require special Commission authorization except in instances of emergency response and program continuation.

SUMMARY OF PENSION FUND ACTIVITY EXTRACTED FROM THE REPORT OF THE PNC BANK (Pension Plan Trustee) FOR THE YEAR ENDING SEPTEMBER 30, 1995

Pension Trust fund value - October 1, 1994\$1,323,921

Annual Employer Contribution \$29,800

Fund Earnings and Market Changes \$126,397

Disbursements for the Year (\$67,108)

Total Pension Fund Activity \$89,089

Pension Trust fund value - September 30, 1995\$1,413,010

Regulatory Agencies of the Member States

Illinois

Environmental Protection Agency
Division of Water Pollution Control
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

Indiana

Department of Environmental Management
Office of Water Management
100 North Senate Avenue
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
1800 WaterMark Drive
Post Office Box 1049
Columbus, Ohio 43266-0149

Pennsylvania

Department of Environmental Protection
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

