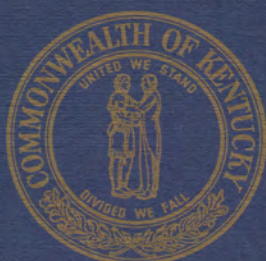


1948 - 1998

A Fifty-Year Pursuit
for Clean Streams





Fifty years ago the residents of the Ohio River Valley came together with a shared sense of responsibility for cleaning up the Ohio River and its tributaries. They recognized that the River was a sorry monument to the excesses of their activities, practically a sewer—the ditching place for the effluents of affluence. If there were any hope for the Ohio Valley to prosper and develop, pollution entering Basin waterways would have to be controlled. Because the River was a resource shared by the people of the Basin, it was also their shared responsibility to improve its health.

In that context, governors of the Basin states met in 1948 and signed the Ohio River Valley Water Sanitation Compact. The Compact outlined an agreement among the states of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia, to clean up the River and protect it from further abuse. The Compact also created a body corporate, the

Ohio River Valley Water Sanitation Commission (ORSANCO), to coordinate activities among the states, with regulatory powers to carry out water pollution control efforts.

The beginnings of ORSANCO predate the signing of the Compact by over a decade. In 1934, the Cleanup and Beautify Cincinnati Week Committee of the Cincinnati Chamber of Commerce proposed and carried out a thorough scrubbing and facelift of the city. The cleanup was such a success that Committee members turned their attention to other areas in need. It was Hudson Biery, then director of public relations for the Cincinnati Street Railway Company and later to become ORSANCO's first chairman, who suggested addressing the much needed clean up of the Ohio River.

The idea caught fire, and by 1935, the Stream Pollution Committee of the Cincinnati Chamber of Commerce was ready to work on the problem.



On June 30, 1948, in Cincinnati, Ohio, the Ohio River Valley Water Sanitation Compact was signed by the governors of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia and West Virginia, thus creating the Commission.

Within the compact, the signatory states pledged:

“faithful cooperation in the control of future pollution in and abatement of existing pollution from the rivers, streams and water in the Ohio River Basin which flow through, into or border upon any of such signatory states, and in order to effect such object, agrees to enact any necessary legislation to enable each such state to place and maintain the waters of said basin in a satisfactory condition, available for safe and satisfactory use as public and industrial water supplies after reasonable treatment, suitable for recreational usage, capable of maintaining fish and other aquatic life, free from unsightly or malodorous nuisances due to floating solids or sludge deposits, and adaptable to such other uses as may be legitimate.”

It soon became apparent that the local efforts were not sufficient for the cleanup of a 981-mile river flowing through many jurisdictions. In 1936, the Congress of the United States authorized formation of the Ohio River Valley Compact Commission, an interstate coalition which began drafting the Ohio River Valley Water Sanitation Compact. Assisted by the Council of State Governments, a working document emerged from the Compact Commission in 1938. By 1940, six states had accepted the Compact. Following eight more years of negotiations, the two remaining states became signatories.

On June 30, 1948, by sheer coincidence the same day that President Harry S. Truman signed the first comprehensive national water pollution control legislation, the Compact became law. In a brief but emotion filled ceremony, the governors of Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia signed the Compact and ORSANCO was born as a regulatory agency for the Ohio River Valley.

The Commission is composed of three members from each of the signatory states, who

are appointed by their respective governors, and three federal representatives, who are appointed by the President of the United States. Appointment of representatives is determined by each state's enabling legislation; in most states one of the Commissioners is head of the environmental regulatory agency. Commissioners serve without compensation other than reimbursement of expenses. The Commission meets regularly, usually three times a year. A small staff (currently 25 members) in Cincinnati, carries out ORSANCO programs.



FINANCIAL SUPPORT

DISTRIBUTION OF PROPORTIONAL SHARES OF COMMISSION BUDGET BASED ON 1990 CENSUS INFORMATION

State	Area Within Ohio River Drainage Basin		Population Within Ohio River Drainage Basin		* Combined Total Percentage
	Area (Sq. Miles)	* Percent of Total Area	Population	* Percent of Total Population	
Illinois	10,745	6.99	623,454	3.08	10.07
Indiana	29,135	18.91	3,882,781	19.22	38.13
Kentucky	39,375	25.55	3,269,605	16.18	41.72
New York	1,904	1.24	163,747	0.82	2.04
Ohio	29,570	19.17	6,692,023	33.12	52.32
Pennsylvania	15,620	10.14	3,451,633	17.08	27.22
Virginia	7,175	4.61	515,052	2.56	7.20
West Virginia	20,610	13.39	1,601,541	7.94	21.33
Total	154,134	100.00	20,199,836	100.00	100.00

* States' contribution is based on one half of its total percent of land area and one half of its total percent of population in the Basin.

The Commission's activities are supported by appropriations from the member states, the amount, which varies by each state's population and land area within the Ohio River Valley. The chart above shows the percent of states' contribution to the budget, their respective land area within the Basin, and population residing within the District.

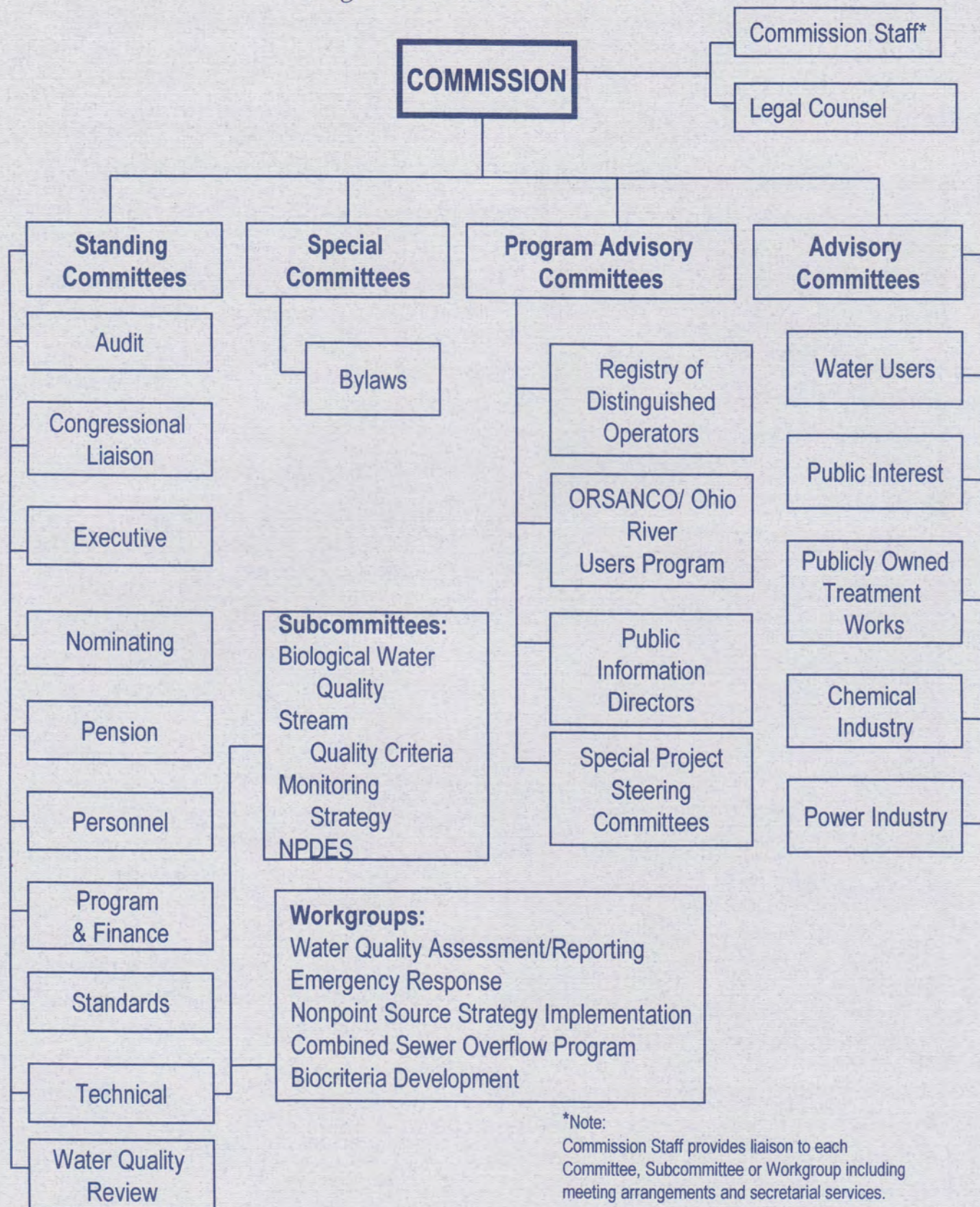
Interestingly, federal funds to augment financial support for the Commission were initially rejected by the Commissioners. However, after considerable debate and hesitation, they agreed to accept funds provided they were used solely for specified projects, and not for the support of on-going programs or staff. Therefore, if the funds were not received, existing Commission programs would not be affected.

It should also be noted that the Compact is a binding agreement among the states. Any state wishing to withhold financial support and withdraw from the Compact must have approval of

the other seven states, an unlikely decision in view of the interstate nature of the Ohio River. As expressed to one of the original Commissioners by a local mayor, water pollution "makes us kin to those people" upstream.

As shown on the following page, OR-SANCO maintains various advisory committees, which provide a variety of services. In addition, much of the data upon which decisions are made, are contributed by other agencies. The Commission represents an economical way for the states to accomplish their objectives. Further funding is also received from states' pollution enforcement fines, industrial contributions for the annual River Sweep and the ORSANCO/Ohio River Users program, and from federal agencies for special studies involving the River.

ORSANCO Committee Organizational Structure



*Note:
Commission Staff provides liaison to each Committee, Subcommittee or Workgroup including meeting arrangements and secretarial services.



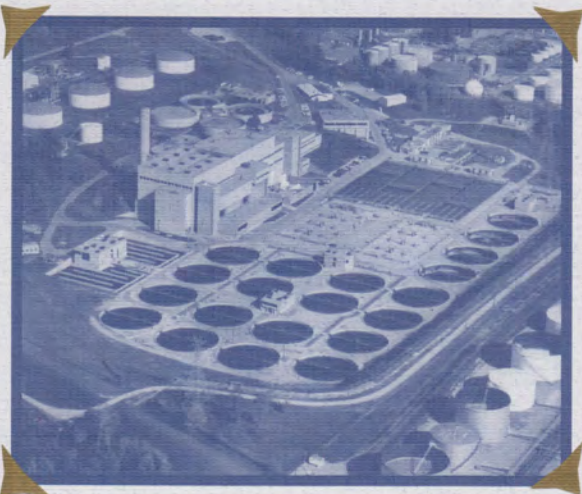
MILESTONES

The following summary portrays some of the milestones reached in a 50-year quest for clean streams in the Compact District:

Sewage Treatment



Waste water treatment facility located along the Ohio River



In 1996, a milestone was reached, as all Ohio River communities discharging to the River provided not only primary, but also more advanced secondary treatment.

When ORSANCO was created in 1948, less than one percent of sewered communities along the Ohio River provided treatment for their waste water. Almost immediately, the Commission inaugurated an intensive program to promote such treatment. Just 16 years later, 99 percent of the population had at least pri-

mary treatment. The majority of these facilities were financed with local funds, although many cities and towns across the country waited for state and federal grants.

Based on water quality studies conducted during this period, the Commission approved waste water standards requiring secondary or more advanced treatment in 1970. This occurred some two years before this level became a requirement under federal law. In 1996, all Ohio River communities had achieved compliance with secondary treatment standards.

Industrial Waste Treatment

The Commission recognized from the beginning that success of its programs hinged on the cooperation and involvement of industry. Industrial advisory committees representing oil, steel, chemical, power, coal, and metal finishing companies were formed to assist in the implementation of Commission programs.

These committees prepared reports on treatment methods, assisted in water quality studies, provided funds for various research projects, and achieved treatment for their own plant waste water. Today, many of these committees remain active. Partnerships with the industries have been, and continue to be, beneficial in controlling waste water discharges in a cost-effective manner.

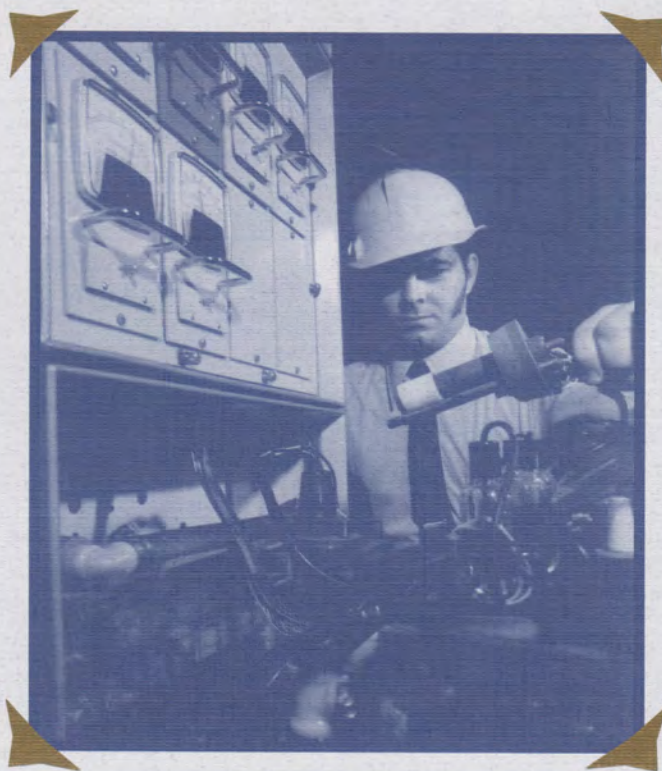
Water Quality Monitoring

While the collection and analysis of water quality data was considered essential to the management of the River from the very beginning, experience with the manual periodic sampling system revealed a need for real-time data. As a result, efforts were initiated to conceive, design and construct the first integrated, automatic water quality monitor system by which data could be transmitted on a real-time basis. The first "robot monitor" was in operation in 1959 at Cincinnati Water Works, followed by similar units at 25 locations on the Ohio River and major tributaries. Data on dissolved oxygen, specific conductance, chlorides, pH, temperature, and solar radiation were automatically transmitted to ORSANCO each hour for processing and analysis. This increased the ability to follow the daily and seasonal variations in river quality. Coupled with the addition of river flow forecasts provided by the U.S. Weather Bureau, the first real insight was obtained on how a large river, such as the Ohio, might be managed for the benefit of all users.

Water quality improvements decreased the need for continuous data of this type in the early 1980s. The system was taken out of operation, except for a few units necessary to monitor dissolved oxygen at critical locations during the summer months. This prototype monitoring system was so innovative that it was subsequently replicated by many agencies involved in water quality management.

Advisory Committees

In addition to industrial committees, ORSANCO recognized the advantage of having others involved in management of the River. They formed the Water Users, Aquatic Life, and Public Interest Advisory Committees to assist in formulating and reviewing Commission programs. For example, the Water Users Committee, comprised of representatives from municipal and industrial entities using river water, has supplied water quality data, and operated the Organics Detection System. The Public Interest Advisory Committee routinely reviews Commission programs to provide a citizens' viewpoint on the need for pollution control.



A technical worker with one of the "robot monitors" used to collect data from the river on a continual basis.

Monitoring for Organic Substances

One of the greatest unknowns in the 1950s was the degree to which organic chemicals were present in river water. To investigate the situation, prototype water samplers were constructed at water utility intakes to trap organic compounds in river water. Early collection methods were soon followed by more sophisticated methods of extraction and detection. Laboratory analytical equipment was still primitive in comparison with today's instrumentation, and yet pioneering work was occurring.

It soon became apparent in the late 1970s that there was a need to provide water users with advanced warning when organic substances had been spilled or otherwise discharged to the River. By that time instrumentation had improved and methods had been developed for the detection of low levels of organics in river water. Because of their interest in river quality and its effect on drinking water, the Water Users Advisory Committee actively participated in development of an Organics Detection System. Gas chromatographs were placed in laboratories of municipal and industrial water treatment plants that used river water. These laboratories continue to analyze samples daily for certain organic compounds and transmit the results to OR-SANCO. If unusual levels are detected, downstream water users are notified so measures to protect the water supply can be initiated.

An important adjunct to the system was development of a computer program to predict time of travel for materials to reach a downstream point based on river flow forecasts provided by the U.S. Weather Service. The combination of the Organics Detection System and the time-of-travel predictions provided the first integrated program to alert downstream users of potential threats to the water supply. Members of the Water Users Advisory Committee partici-

pating in this cooperative system donate their laboratory services. In return, the Commission furnishes equipment, quality control standards, routine maintenance for the instruments, and system planning and coordination.



The Organics Detection System provides advanced warning to water treatment facilities when organic substances are detected in the river. This allows for protective measures to be taken to safeguard the water supply.

Water Quality Criteria

One of the first challenges facing the Commission was the development of water quality criteria that would support the stream uses designated in the Compact (for water supply, recreation, and a healthy aquatic community). Members of the Commission's Engineering Committee (now the Technical Committee), representing state and federal regulatory environmental agencies, in conjunction with the advisory committees and staff, developed the first set of water quality criteria for the Ohio River. Once again, this effort was pioneering, providing a pattern for many of the stream criteria used throughout the U.S.

PUBLIC AWARENESS

In the early 1960s, the Commission produced several documentary films as part of an on-going program to enlist the support of citizens, municipalities, and industry in controlling water pollution in the Compact District. The videos were loaned to schools, universities, wildlife organizations and other interested parties, and were shown extensively on television as a public service. They helped develop an acute public awareness and sensitivity for water pollution control in the Ohio River Valley.

ORSANCO has coordinated a program for the past 10 years aimed at improving the aesthetics of the River. Called "River Sweep," this event invites volunteers to collect debris from the shores of the Ohio River and several tributaries. Arrangements are made to properly dispose of the trash. Many Valley industries have financially supported this program. Those participating in the annual River Sweep are given T-shirts and other memorabilia for their efforts. To date, more than 200,000 citizens have volunteered and 70,000 tons of trash have been collected. In addition, nearly 10,000 kindergarten through 12th grade students who attend schools in the counties along the Ohio River have participated in a yearly poster contest. Winning students receive awards and their creations are used to promote the cleanup event.

Public awareness programs have also expanded to schools and concerned citizens who have been enlisted in a water quality testing program. The participating groups, called *River-Watchers*, are furnished with chemical kits that are used to perform water quality tests on a local waterway. Results are reported to ORSANCO. Participants learn about water quality and how it affects their environment.

Since 1989, "River Sweep" volunteers have cleaned up trash from the shores of the Ohio River and its tributaries.



BIOLOGICAL STUDIES

An objective of the Compact is that the Ohio River be "capable of maintaining fish and other aquatic life." The presence of the River's aquatic community provides a strong indication of the River's health. To assess aquatic life, ORSANCO developed new monitoring techniques, or adapted those used on smaller streams to the Ohio River. The Commission worked with the University of Louisville in the 1950s to develop such techniques, and to compile a comprehensive inventory of aquatic life in the River and its tributaries. Periodic fish population studies were performed from 1957 until 1974, and have been conducted on an annual basis since 1975. Results of these studies document steady improvement. As veteran anglers can attest, desirable species have increased and a day of fishing can yield a sizable catch. Although fish populations have improved, contamination of certain species remains a problem. The Commission collects fish tissue samples yearly, which are analyzed for metals, pesticides, and other contaminants. Based on these results, states have issued advisories against consumption of some species.



A LOOK AT THE FUTURE

Fifty years ago, the Commission set out on an unprecedented mission: to restore a great river which, through decades of abuse, had become a repugnant eyesore. Perhaps the most dramatic signs of that mission can be seen along the banks of the Ohio River. Where once dumps and shanty towns stood, today there are prized properties containing parks, marinas, luxury condominiums and upscale restaurants. On a sunny weekend, dozens of pleasure boats can be spotted at any point on the River.

Increased appreciation of the Ohio River has brought a new facet to the Commission's mission—preservation of the improved quality of the Valley's waterways. In many ways, the task of preservation is more challenging than the initial cleanup. Improvements achieved over the past 50 years have resulted primarily from the treatment of industrial and municipal waste water. Most of the pollution that reaches the waters today is the result of land use activities. Materials deposited on streets, fields, lawns, forests, and parking lots are often washed into the nearest waterway where they can contribute to pollution problems. Control of this type of pollution requires changes to human activities—how food is produced, timber is harvested, and lawns and streets are maintained.

Water quality management agencies across the nation are developing watershed-based approaches to help solve pollution problems. These approaches, many of which are consistent with the way ORSANCO has operated throughout its history, are based on the involvement of all water-based interests within a watershed to find economic and practical solutions.

The involvement of increasing numbers of interest groups in watershed management requires improvements in communicating water quality information. The Commission continues to assess emerging technologies for such communication to the public. Water utilities are provided spill information through an electronic bulletin board, and an ever expanding ORSANCO Internet web site is maintained at www.orsanco.org.

The Commission continues to adapt new techniques for monitoring and assessment of water quality for use on the Ohio River. Innovative sampling methods that allow the detection of toxic substances at the parts per quadrillion level are being tried on the River. And, ORSANCO is at the forefront of an effort to develop biological criteria for large rivers.

In fifty years, the Ohio River Valley Water Sanitation Commission has compiled an impressive record of accomplishments through cooperative action. It is safe to assume that the lessons learned in the first half century of ORSANCO's existence will be applied when meeting tomorrow's challenges.





The Ohio River Valley Water Sanitation Compact represented a unique opportunity for the eight participating states to coordinate efforts to control water pollution in the Compact District. The protected waters of the District are a precious resource valued not only for its vital use as a transportation network and industrial lifeline, but also for its scenic beauty and recreational opportunities. The waters of the Ohio River Valley are essential to the communities through which they pass. The responsibility for managing this valuable resource must be a priority of the states as active participants in the Commission's programs.

