

ORSANCO Annual Report 2013

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This 2013 report marks the first fiscal year summary in ORSANCO’s history. Previous annual reports were based on a calendar year. Due to this change, the activities reported include the period of time from January 1, 2012 through June 30, 2013.

To The President and Governors*

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 fiscal year 2013 to:

The Honorable Pat Quinn
Governor of Illinois

The Honorable Mike Pence
Governor of Indiana

The Honorable Steven L. Beshear
Governor of Kentucky

The Honorable Andrew M. Cuomo
Governor of New York

The Honorable John R. Kasich
Governor of Ohio

The Honorable Tom Corbett
Governor of Pennsylvania

The Honorable Robert F. McDonnell
Governor of Virginia

The Honorable Earl Ray Tomblin
Governor of West Virginia

and

The Honorable Barack Obama
President of the United States

*As of June 30, 2013



Chairman's Message

It's a Wonderful Life ... and a Wonderful River!

"Strange, isn't it? Each man's life touches so many other lives. When he isn't around he leaves an awful hole, doesn't he?"

"You've been given a great gift, George: A chance to see what the world would be like without you. You see George; you've really had a wonderful life. Don't you see what a mistake it would be to just throw it away?"

(Guardian Angel Clarence talking to George Bailey in the classic movie, *It's a Wonderful Life*.)

It's a Wonderful Life opened in 1946, less than two years before the ORSANCO compact was signed by the last of the member states. The movie is an American film classic and is replayed every Christmas season. It tells the story of George Bailey who is given a chance to see what the world would be like without him. The story helps to show how a humble man can mean so much to so many people and make a positive difference in their lives.

ORSANCO commenced operation in 1948, more than twenty years before the United States Environmental Protection Agency was established. In those early years, it began to tackle the challenges of a post-World War II economy and the impact of a growing population and industrial base on the Ohio River. Later, with the onset of federal and state environmental laws, and agencies to administer those laws, ORSANCO's role evolved and changed. It is a testimony to the organization that it continues to be so vital to the protection of the Ohio River. Today it is a science-

based organization that performs many critically important studies; it is a clearinghouse for information; and it brings together all of its member states, including the leaders of the state environmental agencies who have primary authority for protection of the Ohio River. It also works effectively with its many partners, including the United States Army Corps of Engineers and the United States Environmental Protection Agency.

Unlike Clarence in the movie, I am not able to show you what life along the Ohio River would be like if ORSANCO never existed. But consider these facts about our "Bedford Falls," the Ohio River:

- The Ohio River is nearly 1000 miles long;
- 10 percent of the U.S. population – more than 25 million people – live in the Ohio River Basin;
- The Ohio River defines the boundaries for the states of Ohio, West Virginia, Indiana, Kentucky, and Illinois;
- 300 million tons of cargo are transported on the entire Ohio River each year, more than that of the Panama Canal; and
- The Ohio River is the source of drinking water for 5 million people.

We don't have one "George Bailey" who ensures our "Bedford Falls" doesn't become "Pottersville," we have dozens of them. Please take a few moments to look at the names and positions of the ORSANCO staff – they are listed at the end of this annual report. These wonderful individuals work tirelessly, humbly, and

impressively. They are biologists, engineers, chemists, educators, and administrative personnel. Every day they work to preserve and improve



the Ohio River. Sometimes you will see them – coordinating the annual Ohio River Sweep that improves the river banks and connects its volunteers with the river, talking with local residents about the fish they collected in ORSANCO's mobile aquarium to show what life is like beneath the surface of the river, or teaching in classrooms about the river's ecology and biodiversity. But unless you visit ORSANCO's offices, you won't see them performing analytical testing, preparing boats and equipment for fish population studies, or compiling enormous amounts of data. This is the "heavy lifting" that goes unnoticed, but not unappreciated.

ORSANCO also brings together an amazing and impressive collection of talented professionals from around the country to support the

work performed by ORSANCO staff. This includes the commissioners who volunteer their time to provide direction. Then there are the professionals who volunteer their time to populate the Technical Committee, the Pollution Control Standards Committee, the Public Interest Advisory Committee, and several more committees. These committees all share a common attribute – they exist to protect and improve the Ohio River for the benefit of everyone who uses the river – for commerce, recreation, or drinking water.

But ORSANCO doesn't even end there. We have many partners, including federal and state agencies, environmental organizations, non-profits, and others who participate in ORSANCO meetings and committees, who provide or receive ORSANCO data or otherwise contribute to or benefit from what ORSANCO does. We collaborate extensively with these partners, and the result is an ever-improving Ohio River.

I hope that, as you review this annual report, you will be impressed with ORSANCO and appreciate what it means to the Ohio River Basin. At the end of *It's a Wonderful Life*, the residents of Bedford Falls arrive at the Baileys' home with money and support. It is an opportunity for everyone whose life was touched by George Bailey to express their appreciation. We hope you will think of ORSANCO often, participate in its important work, and support it in every way you can so that we can all continue to exclaim: It's a wonderful life – and a wonderful river!

A handwritten signature in black ink that reads "Kenneth S. Komoroski".

Kenneth S. Komoroski, Chairman



Working Together to Protect the Ohio River

The Ohio River Valley Water Sanitation Commission, ORSANCO, was created in 1948 with the signing of a compact by the Governors and appointed Commissioners of eight states in the Ohio River Basin – Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, Virginia, and West Virginia.

The Compact is an agreement among the states and their respective environmental agencies to work together to reduce current pollution and prevent future pollution within the Ohio River Basin. The states decided that one agency, ORSANCO, would regulate discharges to the Ohio River. This single agency, composed of many parts, would promote consistency throughout the basin, while providing support to the states in carrying out their responsibilities.

In addition to state, federal, and local agencies, ORSANCO partners with agricultural, health, and natural resource agencies, industries, and local environmental and conservation groups. Because ORSANCO employs a cooperative approach to improving water quality, the Commission also seeks input from advisory committees representing various water-related interests in the Ohio River Watershed area.



There are five active advisory committees for the Commission. The committees' duties and functions are assigned to them as deemed necessary, and members are appointed by the Chairman or by the Commission.

WATER RESOURCES COMMITTEE

The Water Resources Committee guides the development of a water resources program and recommends appropriate action regarding water resources management issues such as floods, droughts, and water shortages in the Ohio River Basin. Committee membership is open to all Ohio Basin states and includes representatives from federal agencies such as the U.S. Army Corps of Engineers and the U.S. Geological Survey.

WATER USERS ADVISORY COMMITTEE

The oldest advisory committee, this group comprises drinking water utilities along the Ohio River and its tributaries. The committee discusses water quality issues and provides input on ways to improve the river as a source of drinking water.

The committee has most recently been active in collecting data on bromide levels in the Ohio River in its mission to provide safe drinking water for the basin.

PUBLICALLY OWNED TREATMENT WORKS (POTW) ADVISORY COMMITTEE

ORSANCO's POTW Advisory Committee encompasses municipal wastewater treatment utilities along the Ohio River. It seeks to improve the operation of POTWs through technology transfer and provides input on wastewater treatment issues.

POWER INDUSTRY ADVISORY COMMITTEE

Throughout its history, ORSANCO has worked with numerous industry advisory committees to find cooperative approaches to improving water quality. As the largest water user on the Ohio River, the power industry has a great reliance on water and has been the most active industry committee in recent years.

PUBLIC INTEREST ADVISORY COMMITTEE (PIACO)

PIACO members represent various river-based advocacy and education groups, as well as recreational and entertainment interests. With the perspective of those who are on the river, this committee provides valuable feedback on Commission programs that are designed to educate and communicate issues to the public.

Throughout 2013, the Commission expanded its outreach efforts within the basin, working to broaden its support, as well as to collaborate with other interstate basin commissions.



From left to right: Jerry Schulte, ORSANCO's Manager of External Relations; Peter Tennant, ORSANCO's Executive Director; U.S. Congressman Steve Chabot; and Ohio Commissioner Paul Tomez.

OHIO RIVER BASIN CONGRESSIONAL CAUCUS

The bipartisan Ohio River Basin Congressional Caucus was formed in October 2009 to address critical economic, infrastructure, agricultural, environmental, and community issues within the Ohio River Basin. The major goal of the Caucus is to provide a forum for education and discussion on Ohio River Basin issues and to ensure support from Congress and the Administration for programs essential to the watershed. There are 28 Senate and 55 House seats in the Ohio River Basin. Working together, Caucus members can ensure that appropriate federal support is provided to protect and improve the wise use of the abundant resources found in the Ohio River Watershed.

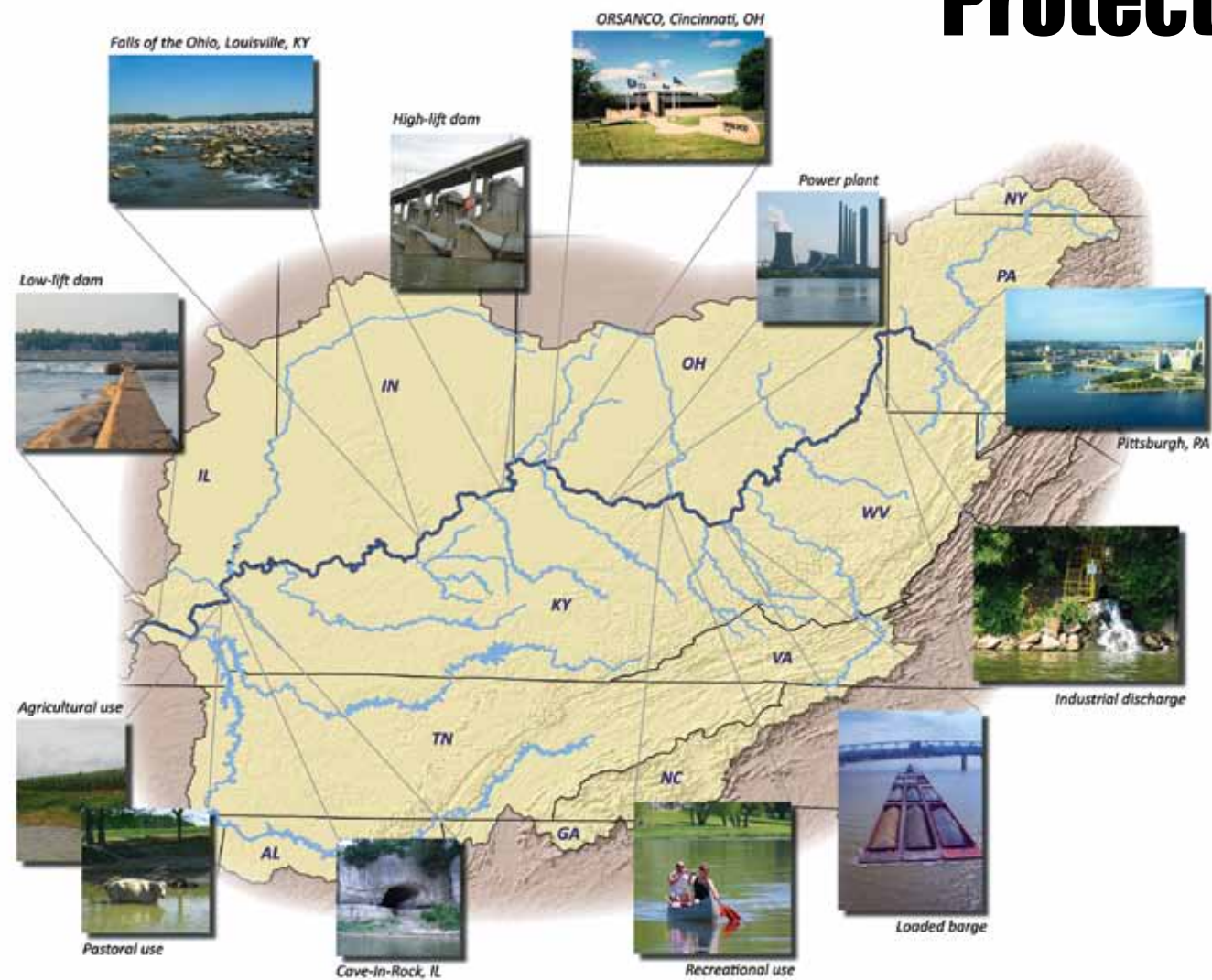
THE UPPER MISSISSIPPI BASIN ASSOCIATION (UMRBA)

In June 2013, ORSANCO held a joint meeting with the Upper Mississippi River Basin Association (UMRBA) in St. Louis, MO. UMRBA is a regional interstate organization formed by the Governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to coordinate river-related programs and policies for the member states. The Ohio and Upper Mississippi rivers are major sub-basins of the Mississippi River. Both rivers are used for drinking water supply and commercial navigation, and both river basins support extensive agriculture. Both organizations face similar challenges. The joint meeting provided an opportunity to share information and approaches to issues such as navigation, energy development, spill response, nutrient management, water quality monitoring, and aquatic nuisance species.



From left to right: UMRBA Chair Dave Frederickson and ORSANCO Chairman Ken Komoroski.

Protecting Ohio River Uses



Protecting Drinking Water

The Ohio River has a multitude of uses, each vitally important to the citizens of the Ohio River Valley. It serves as a main artery for transportation, a source of drinking water and energy production, a home for fish and wildlife, and a venue for a variety of leisure and sport activities. Making sure the river is safe for drinking water supply, aquatic life, and recreation are all important to quality of life. ORSANCO's Pollution Control Standards define the specific uses for the Ohio River and establish criteria that must be met to ensure that the river is capable of supporting these uses.

Under the authority of its Compact, ORSANCO's Pollution Control Standards must be met by all

dischargers to the Ohio River whose effluent can seriously impact water quality. To keep pace with current issues, ORSANCO reviews the standards every 3 years. As part of the review process, workshops and public hearings are held for public input.

In 2012, ORSANCO revised its Pollution Control Standards in several areas, including temperature criteria for aquatic life protection, selenium criteria, and contact recreation criteria. A temperature criterion for human health was also added to the standards.

The Ohio River and its tributaries provide approximately 5 million Americans with a direct source of water for various purposes, including

cooking, cleaning, bathing, and of course, drinking. The water goes through numerous filtering and treatment processes prior to use; however, ORSANCO still must closely monitor water quality in order to assure that it is acceptable for this use.



SPILLS AND EMERGENCY RESPONSE

In 2008, the National Response Center (NRC) reclassified ORSANCO and began sending spill reports with caller and responsible party information removed. In June 2013, ORSANCO began receiving complete incident reports again from the NRC. With the full reports, ORSANCO is better able to locate spills, assist with spill notifications, and alert and protect drinking water utilities and industrial water users.

ORGANICS DETECTION SYSTEM

The Organics Detection System (ODS) is a partnership between ORSANCO, drinking water utilities, and industries along the Ohio River and its tributaries. Due to recent and ongoing upgrades, the system is better able to detect, identify, and track chemical spills and releases at 16 stations along the Ohio River. No major detections were reported in 2013, although occasional low level benzene spikes were seen in Ashland, KY. Benzene is a petroleum chemical has the potential to contaminate drinking water due to emissions from petroleum and chemical industries, leaching landfills, and gas storage tanks.

Just retired in 2013, Nang Huynh had been an invaluable part of the organics detection system team since 1977, the year ORSANCO's ODS Program was developed. Nang's knowledge of GC/MS and other analytical instrumentation has helped other ODS operators and ORSANCO staff for the past 36 years. He readily embraced new technologies and was accurate and precise in his analyses because of his keen attention to detail. Nang was one of the first operators to expertly use the GC/MS to detect and analyze water samples to protect drinking water utilities from contamination from organic chemicals.

Nang immigrated to the United States with his wife and young child from Vietnam in a small boat. Carrying only the few items that could be easily stored, he arrived in America, speaking little English, but highly skilled in analytical chemistry and physics, and with hopes of a better life



Nang Huynh and ORSANCO Chemist Lila Xepoleas Ziolkowski.

for himself and his family. With his career at Evansville Water Company, he has raised three children, each of whom have advanced college and medical degrees. Nang and his wife, Loan Anh, have both volunteered for and participated in several ORSANCO monitoring programs, including the TDS Bromide Study, the Bimonthly Sampling Program, Bacteria Monitoring, and Algae and Nutrient Monitoring.

TDS BROMIDE STUDY

The goal of the TDS Bromide Study, funded by the Ohio River Users program and the ODS Renovation Project, was to develop a better understanding of total dissolved solids (TDS) at ambient levels in the Ohio River. High levels of TDS are generally not a health concern but may cause, taste, odor, and aesthetic effects in drinking water. Common inorganic ion constituents of TDS were also measured. Bromide ion levels, a minor component of TDS, but a significant contributor in brominated

trihalomethane (THM) formation during the drinking water process, was of interest to ORSANCO. This data may be used in considering whether a bromide criterion should be included in future pollution control standards. THMs are a group of compounds that are carcinogenic to humans; drinking water utilities are required to routinely monitor for THMs in finished "tap" water.

Each week, samples were collected from 16 drinking water utilities, power plants, and industrial intakes. Preliminary results from this study indicate that no samples from the Ohio River exceeded ORSANCO's pollution control standard for TDS. A final TDS Bromide Study report will be available in October 2013.

SHALE GAS INVENTORY

Large reserves of natural gas have been found in the Marcellus and Utica Shales that underlie portions of the Ohio River Basin. Advances in drilling techniques, including horizontal drilling and hydraulic fracturing, coupled with favorable economic factors, have made extracting these gas reserves a viable and lucrative operation. Thousands of wells have already been drilled in Ohio, Pennsylvania, and West Virginia, with many more to come.

The rapid expansion of the natural gas industry, however, has prompted questions regarding potential environmental impacts. The Commission, in part through its Water Resources Initiative, is evaluating how shale gas development may impact water resources in the basin. The effort seeks to inventory existing gas wells and to better understand water supply needs, wastewater management, and potential water quality impacts. An inventory of state and federal water resource laws and regulations pertaining to natural gas extraction, including water withdrawals and waste management, will also be compiled as part of the study. The final report is scheduled for completion in spring 2014.

Protecting Aquatic Life

The central task of the ORSANCO Biological Programs is to determine if the Ohio River is capable of maintaining healthy populations of fish and aquatic life. ORSANCO's Biological Pool Surveys monitor fish and macroinvertebrate populations as indicators of overall water quality in the Ohio River. Biologists track populations in all 20 pools of the Ohio River, and each pool is monitored on a 5-year cycle.

OHIO RIVER FISH INDEX

In 1993, ORSANCO developed and implemented an assessment technique to compare fish and environmental data sampled

from the various navigational pools of the Ohio River. In 2003, ORSANCO developed the Ohio River Fish Index, which was subsequently modified in 2008 to become the mORFin (modified Ohio River Fish Index). Using the collected data, the index assigns scores to rate the relative condition of fish communities among the pools. Each year, ORSANCO Biological Crews collect data from up to four navigational pools using a random, probability-based design that selects 15 sampling locations within each of the pools. Fish are captured, identified, measured, and inspected prior to release. The data obtained are converted into multiple metrics (e.g. diversity, abundance, pollution tolerance, etc.) that are added together for each site and compared to previous results in order to calculate the mORFin score values.

ORSANCO Biological Crews assessed Emsworth, Pike Island, Meldahl, and Newburgh pools in 2012 and are sampling Dashields, Hannibal, RC Byrd, and Smithland pools in 2013. Of the four pools sampled in 2012, Newburgh was found to be in "very good" condition, and

Pike Island and Meldahl were found to be in "good" condition. Emsworth was determined to be in "fair" condition. Over the years, the various pools have generally ranked from "fair" to "very good." To date, no pools have ranked as "poor" or "very poor."

OHIO RIVER MACROINVERTEBRATE INDEX

In 2012, ORSANCO completed an Ohio River Macroinvertebrate Index (ORMIn). Similar to the modified Ohio River Fish index (mORFin), the ORMIn looks at various measures of macroinvertebrate assemblages, including species habits, tolerances, feeding, and taxonomic

groups. It scores sites based on deviation from expected results derived from previous sampling events. As part of the development of the ORMIn, ORSANCO biologists evaluated three methods of macroinvertebrate sampling and determined that a combination of two methods, Hester Dendys and shoreline kicks, provided the most sensitive index. This new index will be further tested using data collected during the 2013 field season and evaluated for inclusion as an additional indicator in the annual biological pool surveys.

OHIO RIVER BASIN FISH HABITAT PARTNERSHIP

The Ohio River Basin Fish Habitat Partnership was formed to protect, restore, and enhance priority habitat for fish and mussels in the watersheds of the Ohio River Basin.

A data-driven habitat assessment modeling process was recently completed to identify priority areas in which to focus efforts of the partners. The results of seven separate models were combined to pinpoint the watersheds in the basin with the most intact streams. This partnership will work with organizations to develop habitat restoration projects within these watersheds. Future habitat assessment models from these projects will lead to the development of refined decision support tools. More information on these efforts can be found at www.midwestfishhabitats.org.



Protecting Recreational Use

The Ohio River has many uses, including recreational activities such as boating, swimming, skiing, and fishing, which put people in direct contact with river water. ORSANCO monitors water quality, as it could directly affect the safety of contact recreation.

BACTERIA MONITORING FOR CONTACT RECREATION

Bacteria levels in the Ohio River and its tributaries can change rapidly following rain events. Bacteria can enter rivers and tributaries through direct discharge from animals, agricultural and storm runoff, and combined sewer overflows (CSOs). ORSANCO monitors levels of *E. coli* and fecal coliform in six major urban areas along the river's length. These bacteria are pathogens found in the intestines of warm-blooded animals and are used as indicators of fecal contamination that may pose potential health risks to people who come in contact with river water. Bacteria samples are collected and analyzed regularly during

the contact recreation (e.g. swimming, boating, skiing, etc.) season of April through October, and also at times just prior to special recreational events. Bacteria monitoring data and updates regarding water quality are available to the public at www.orsanco.org/bacteria.

ORSANCO also publishes a Cincinnati Weekly Water Quality Report, a summary of the most recent bacteria data, in order to advise the public if any increased health risks are present at the time due to increased bacteria levels.

In addition to its regular activities, ORSANCO also provides monitoring for events that bring numerous people into contact with the river. In 2013, ORSANCO monitored for the following events:

- The Great Ohio River Swim (Cincinnati, OH)
- Buffalo Trails Triathlon (Maysville, KY)
- Cincinnati Triathlon (OH)
- Ironman Louisville (KY)

FISH CONSUMPTION ADVISORIES

Recreational fishing is very common along the Ohio River, and many individuals consume the fish that they catch. Certain chemicals, such as polychlorinated biphenyls (PCBs) and mercury are known to be unhealthy if ingested in large quantities. ORSANCO leads a multi-agency workgroup consisting of representatives from Illinois, Indiana, Kentucky, Ohio, Pennsylvania, West Virginia, and the U.S. Environmental Protection Agency (U.S. EPA). As part of the workgroup, ORSANCO helps monitor and maintain a protocol used to determine Ohio River fish consumption advisories (ORFCAP).

The workgroup meets on an annual basis to discuss Ohio River-related fish contaminant issues and establish fish advisories.

ORSANCO Biological Crews collect fish tissue samples at various locations along the Ohio River main stem. These samples are analyzed for PCBs, total mercury, methylmercury (the type of mercury that can bioaccumulate in fish tissue), and other contaminants. These data are used to update the Ohio River fish consumption advisories, which are available to the public online at www.orsanco.org/fca.



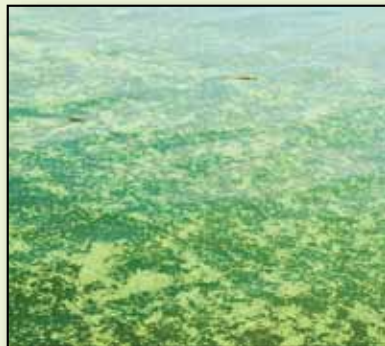
U.S. Senator Rob Portman (left) participates in the Ohio River Paddlefest in Cincinnati, OH.

Nutrient Reduction Activities

Nutrient pollution, especially from nitrogen and phosphorus, has consistently ranked as one of the top causes of degradation in U.S. waters for more than a decade. Excess nitrogen and phosphorus lead to significant water quality problems, including harmful algal blooms, hypoxia, and declines in wildlife and wildlife habitat. ORSANCO has been working with federal, state, and local agencies to address the causes and effects of excess nutrients both within the Ohio River Basin and in downstream waters.

NUTRIENT CRITERIA DEVELOPMENT

Certain types of algae can cause taste and odor problems in drinking water. In 1999, ORSANCO initiated a cooperative monitoring program with drinking water utilities along the Ohio River to collect consistent information on algae and associated parameters. Data from this effort provide a basis for development of numerical nutrient criteria; the states have therefore tasked ORSANCO to take the lead in developing nutrient criteria for the Ohio River. The goal of this effort is to develop scientifically defensible criteria that can be used by the states and ORSANCO to manage sources of nutrients in the watershed.



Microcystis algal bloom in the Ohio River.

GULF OF MEXICO HYPOXIA

A hypoxic (low oxygen) zone develops in the Gulf of Mexico near the Mississippi River every summer. It is caused by excess nutrients coming from the Mississippi River, which feeds large algal blooms in the Gulf. These algal blooms are eventually decomposed by bacteria that consume oxygen in the process. The resulting area of low dissolved oxygen has been measured in excess of 20,000 km² (about the size of the state of Massachusetts). As a member of the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, ORSANCO helps to set priorities for nutrient reductions throughout the Mississippi River and Ohio River basins.



Representatives from Indiana, Kentucky, and Ohio sign the Ohio River Basin Water Quality Trading Project Agreement.

OHIO RIVER BASIN WATER QUALITY TRADING PROJECT

The Ohio River Sub Basin Committee (which was convened by ORSANCO) is continuing to work with representatives from state agricultural, environmental, and natural resource agencies on implementing strategies to reduce nutrients in the Ohio River Basin. Water quality trading is an innovative approach to achieve water quality goals more efficiently. Trading is based on the fact that sources in a watershed can face very different costs to control the same pollutant. Trading programs allow facilities facing higher pollution control costs to meet their regulatory obligations by purchasing environmentally equivalent (or superior) pollution reductions from other sources with lower reduction costs, thus achieving the same water quality improvement at a lower overall cost. ORSANCO partnered with the Electric Power Research Institute (EPRI) to develop the Ohio River Basin Trading Project. This project is the first trading program designed to allow interstate trades and is the largest trading project in the world. The Project is currently in the pilot phase, with full implementation expected in 2015.



New Harmony Bridge in Evansville, IN.

LOWER WABASH RIVER NUTRIENT MONITORING

The Wabash River enters the Ohio River at the upstream end of the Smithland Pool. The Smithland Pool has experienced lower dissolved oxygen levels in recent years and was designated as impaired in ORSANCO's 2008 Assessment of Water Quality Conditions. Previous sampling in the Smithland Pool indicates that the Wabash River may be a significant contributor to the problem. In addition, the Wabash River has been identified as one of the largest contributors of nitrogen to the Gulf of Mexico and the zone of hypoxia.

Under a grant from the Indiana Department of Environmental Management, ORSANCO is engaged in a study of the output from the Wabash River. The study has two objectives: estimate the annual load of total nitrogen and total phosphorous exiting the Wabash River; and determine how the Wabash River may contribute to low dissolved oxygen in the Smithland Pool of the Ohio River. The initial period of this project began in July 2010 and ended in September 2011. The project was reauthorized for an additional 3 years beginning in January 2012.



Public Information, Education, and Outreach

ORSANCO provides the public with various opportunities to learn more about the Ohio River and water quality and promotes participation in river-related events and activities throughout the entire Ohio River Watershed.

LIFE BELOW THE WATERLINE

Life Below the Waterline is ORSANCO's mobile aquarium that displays Ohio River fish at selected river-related events and activities throughout the Ohio River Watershed every year. The aquarium holds 2,200 gallons of water and Ohio River fish. The display is designed to demonstrate the diversity of life sustained by the Ohio River and the improvements that have been made in water quality. The fish in the aquarium are

collected on site by electrofishing, stunning the fish with a mild electric current. The fish are then returned, unharmed, to the river following each event.

In 2013, the mobile aquarium made appearances in the following locations: Rising Sun, IN; Louisville, KY; Paducah, KY; Pikeville, KY; Chautauqua, NY; Cincinnati, OH; and Pittsburgh, PA.

RIVER SWEEP

For over 24 years, ORSANCO has dedicated the third Saturday in June to picking up trash and debris from the shorelines of the Ohio River and its tributaries during its annual River Sweep.

Volunteers from Pittsburgh, PA to Cairo, IL participate in River Sweep every year, and the event could not be made possible without the support of many state and local county coordinators throughout the Ohio River Basin.

One such outstanding coordinator is Kelly Chapman (below) in Boone County, KY. For the 2013 River Sweep, she coordinated six sites in Boone County and covered over 15 miles of shoreline. Over 250 volunteers collected approximately 700 bags of trash, 56 tires, and 1 ton of metal, even though some of the debris along the shoreline was not accessible due to high river levels.



"River Sweep is my favorite cleanup of the year. I love organizing the event for Boone County. It is like having six different parties at the same time in different places, and I have to make sure everyone has everything they need to make it a huge success. I love the excitement of getting all the supplies, food, and prizes together. I also love the excitement of watching the river levels and rain each year to make sure we can have it. I remember the first sweep I organized I couldn't sleep the night before at all, but after each sweep I get a great relief of satisfaction. We have so many people here in Boone County that volunteer their time every year and make a difference in our community. This is definitely a cooperative effort among many people and organizations."

Students in counties bordering the Ohio River are encouraged to participate in a poster and T-shirt design contest for River Sweep every year. The winning designs are used on River Sweep posters, brochures, and T-shirts that are given to all participating volunteers. The 2013 poster winner was Amy Willis (left), a junior from Parkersburg High School in Parkersburg, WV, and the T-shirt design winner was Abigail Taphorn (right), a senior at Colerain High School in Cincinnati, OH.



2013 River Sweep Sponsors:

- AEP River Operations
- AK Steel
- Amherst Madison
- ArcelorMittal
- Atlas Energy
- Babst Calland
- BASF
- Buffalo Trace Distillery
- Chesapeake Energy
- Childers Oil Company
- CONSOL Energy
- Costco
- Dayton Power and Light
- Dominion Foundation
- Duke Energy
- DuPont Washington Works
- Duquesne Light Company
- Gallatin Steel
- Great Lakes Brewing Company
- Illinois EPA SCALE Grant
- Kentucky American Water
- Kentucky River Authority
- Koppers
- Lafarge
- LG&E and KU
- Louisville & Jefferson County MSD
- Louisville Water Company
- Luhr Bros., Inc.
- Marathon Petroleum Corporation
- Massac County SWCD
- Neville Chemical Company
- Owensboro Grain Company
- Rex Energy
- Rumpke
- SABIC Innovative Plastics
- Sanitation District No. 1 of Northern Kentucky
- Talisman Energy
- Toyota
- XCG Consultants
- West Virginia American Water



RIVERWATCHERS

RiverWatchers is a citizen volunteer monitoring program for the Ohio River and selected tributaries. RiverWatchers was started as a pilot project in 1992 with five monitoring groups. In 2013, groups from six Ohio River Basin states participated in the program. These groups include school groups and citizens who are concerned about water quality issues. RiverWatchers collect water quality data throughout the year and submit their results to ORSANCO. These results are posted on ORSANCO's website.

SPECIAL RECOGNITION:
Woodland Hills School District (PA):
Shaffer Elementary and
Woodland Hills Academy

CATHIE PEARSON and her students have been active RiverWatchers for over 17 years. Several of her students received special awards in 2013:

OLIVIA VIXMAN, 5th grader, began a storm drain stenciling project with her local wastewater treatment



facility after she discovered poor water quality results for a stream behind her house. Through her efforts to create community awareness, she won the "Light of the Mon" award for environmental stewardship and was honored at the first annual "Riverfest" in Pittsburgh.

HAILEY SANOSKE, 6th grader, won second place in the Fairchild Challenge at Phipps, an



environmental competition, for an editorial cartoon to create awareness about the invasive zebra mussel.

CAITLIN HAYDEN, 6th grader, also addressed the issue of invasive species with an editorial letter and won first place in the same competition. Shaffer Elementary and Woodland Hills Academy were the first place winners of the year-long Fairchild Challenge. They were given the honor of reopening the fountain at Point State Park, along with Governor Corbett, during Pittsburgh's Riverlights Celebration in June 2013.

ANNIE LI, the 1st grade winner of the 2013 River Sweep poster contest, donated half of her award money back to ORSANCO to help cover the cost of River Sweep. Annie and many of her fellow classmates volunteered at one of the ORSANCO's River Sweep sites in Pittsburgh, PA.



FOUNDATION FOR OHIO RIVER EDUCATION (FORE)

The Foundation for Ohio River Education was founded by ORSANCO in 2004. FORE teaches people of all ages in the Ohio River Basin to

become environmental stewards through hands-on programs that get people on the water and engaged in preserving the cultural, ecological, and economic value of our rivers.

FORE has developed a variety of programs designed to engage students, teachers, and the community in science education focused on the Ohio River and its watershed. These programs reach over 3,000 people each year. The focal point of FORE's activities is the "River REACH" program, which stands for "River Research, Education, and Adventure CHarters". The "River REACH" program connects students to the Ohio River through hands-on voyages of discovery in partnership with Queen City Riverboats, based in Dayton, KY. While on board, students test water quality using the same methods and equipment as scientists who monitor and protect the river. They also see

firsthand how they depend on the river, while discovering beauty and wildlife that surrounds them in the most unexpected places. The "River REACH" program engages students in applied STEM (Science, Technology, Engineering, and Mathematics) disciplines through hands-on water quality monitoring, habitat assessments, and studies of aquatic organisms that are used to study the health of the river system.



Hailey Sanoske (fifth from the left), their teacher Cathie Pearson (sixth from the left), and Caitlin Hayden (seventh from the left) attend the Fairchild Challenge in Pittsburgh.

2013 Participating RiverWatchers:

- Clymer Central School (NY)
- Warren County Conservation District (PA)
- Woodland Hills School District (PA)
- Williamstown High School (WV)
- Wahama High School (WV)
- Leon Elementary School (WV)
- Worthington Elementary School (KY)
- Raceland High School (KY)
- New Richmond High School (OH)
- Cincinnati State College (OH)
- Ivy Tech Community College (IN)
- Switzerland County High School (IN)
- Mater Dei High School (IN)



Collaboration and Technology

WaterQuality 1.1 App

Since 2010, FORE and Northern Kentucky University have collaborated on numerous education projects focused on the Ohio River. The partnership is known as the Ohio River STEM (Science, Technology, Engineering, and Mathematics) Institute. One outcome of the partnership was the development of the WaterQuality 1.1 app for iPads and iPhones. WaterQuality 1.1 was designed to allow students, teachers, and citizens to electronically log water quality data from rivers, lakes, and streams. The app can also be used as a comprehensive guide for learning about water quality parameters and a field guide for identifying macroinvertebrates. It was launched in fall 2012, and proceeds from its sale that are not used to expand its capabilities will support Ohio River STEM Institute educational programs.



Recr8OhioRiver App

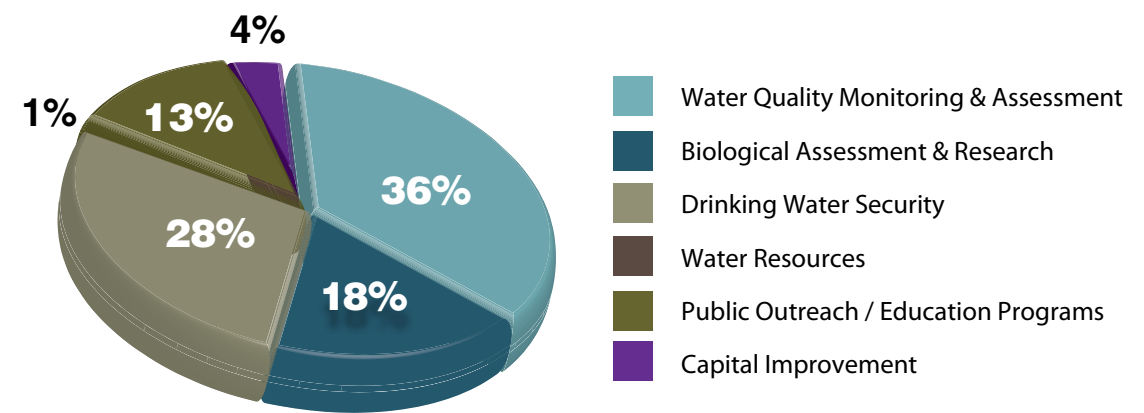
ORSANCO collaborated with Metropolitan Sewer District of Greater Cincinnati (MSD) and Sanitation District No. 1 of Northern Kentucky (SD1) to develop the Recr8OhioRiver app as a public service initiative. The Recr8OhioRiver app was designed to help recreational users make informed decisions about where and when to boat, fish, swim, and engage in other water sports on the Ohio River. Recr8OhioRiver focuses on water quality, river conditions, and weather, and also provides information about local marinas, fish advisories, and boat traffic. Recr8OhioRiver is a free wireless device app, and the information is also available online at www.Recr8OhioRiver.org.



Financial Overview

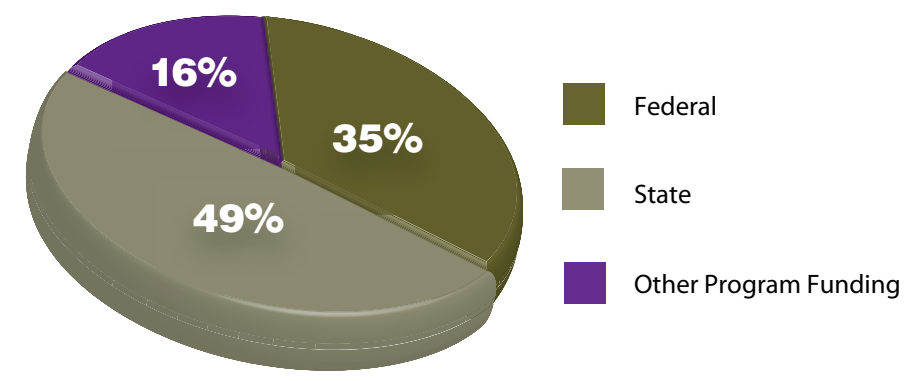
Expenditures by Major Program Area

Water Quality Monitoring & Assessment	\$1,345,008
Biological Assessment & Research	\$682,256
Drinking Water Security	\$1,022,846
Water Resources	\$19,509
Public Outreach / Education Programs	\$465,263
Capital Improvement	\$163,360
TOTAL:	\$3,698,242



Revenues by Major Source

Federal Funding	\$1,888,620
State Funding	\$1,363,500
Other Program Funding	\$602,183
TOTAL	\$3,854,303



Detailed financial information can be found in the June 30, 2013 audited financial statements.

ORSANCO Staff

Peter Tennant, P.E., BCEE, Executive Director & Chief Engineer
Tracey Edmonds, Administrative Assistant

Technical Programs

Jason Heath, P.E., Technical Programs Manager & Assistant Chief Engineer
Eben Hobbins, Environmental Specialist
Greg Youngstrom, Environmental Specialist

Biological & Research Programs

Jeff Thomas, Manager of Biological Programs
Ryan Argo, Senior Biologist
Rob Tewes, Aquatic Biologist

Source Water Protection & Emergency Response

Jerry Schulte, Manager of Source Water Protection, Emergency Response & External Relations

Travis Luncan, Environmental Chemist
Lila Xepoleas Ziolkowski, Analytical & Environmental Chemist

Water Resources

Sam Dinkins, Water Resources Assessment Manager
Steve Braun, Environmental Specialist
Stacey Cochran, Environmental Specialist

Public Information Programs

Jeanne Ison, Manager of Public Information Programs
Melissa Mann, Public Information/Education Specialist

Administrative Programs & Human Resources

David Bailey, Director of Administration & Human Resources
Donna Beatsch, Data Processing Specialist, Part-time
Joe Gilligan, Comptroller
Lisa Cochran, Administrative Assistant, Part-time

John Klear, Data Systems Administrator
Matt Glazer, Maintenance, Part-time

FORE

Heather Mayfield, Director

Staff Milestones

Donna Beatsch – 40 years
Jerry Schulte – 25 years
Lila Xepoleas Ziolkowski – 10 years
Greg Youngstrom – 10 years
Rob Tewes – 5 years

Special Recognition:

Jeanne Ison was recognized in 2013 for 29 years of exceptional service to the Commission as manager of its public information and education programs. Jeanne founded the River Sweep program, and 2013 marks Jeanne's 24th consecutive River Sweep. Through her hard work and dedication, she has directed River Sweep activities since the program began and has continued the tradition of many successful River Sweep events throughout the entire 3,000 miles of Ohio River shoreline. Throughout the years, River Sweep has been nationally recognized and has grown into one of the largest efforts of its kind. Jeanne also initiated and worked extensively with ORSANCO's "Life Below the Waterline" mobile aquarium. Jeanne will be retiring in October 2013.

In Memory:

Paul Spires, Sr. was a dedicated employee and friend who worked for ORSANCO from 2001-2010. Paul provided maintenance services and loved traveling along the river with ORSANCO's mobile aquarium. We miss you, Paul.

Members of the Commission

Chairman: Kenneth S. Komoroski
Vice-Chairman: Toby Frevert
Secretary/Treasurer: Thomas Easterly
Executive Director & Chief Engineer: Peter Tennant, P.E., BCEE

Illinois

Lisa Bonnett, Director, Illinois Environmental Protection Agency
Toby Frevert
Phillip C. Morgan

Indiana

Joseph H. Harrison, Sr., Bowers Harrison, LLP
Thomas Easterly, Commissioner, Indiana Department of Environmental Management
Vasiliki Keramida, Ph.D., President and Chief Executive Officer, Keramida Environmental, Inc.

Kentucky

Leonard Peters, Kentucky Energy and Environment Cabinet
Jerry Abramson, Lieutenant Governor
C. Ronald Lovan, P.E., President/CEO, Northern Kentucky Water District

New York

Douglas E. Conroe, Director of Operations, Chautauqua Institution
Joe Martens, Commissioner, New York Department of Environmental Conservation
Michael P. Wilson

Ohio

Scott Nally, Director, Ohio Environmental Protection Agency
Paul Tomes
Stuart F. Bruny

Pennsylvania

Greg Phillips, District Manager/CEO, Westmoreland Conservation District
E. Christopher Abruzzo, Acting Secretary, Pennsylvania Department of Environmental Protection
Charles Duritsa

Virginia

David A. Johnson, Director, Department of Conservation and Recreation
David Paylor, Director, Virginia Department of Environmental Quality
Robert L. Dunn, Virginia State Water Control Board

West Virginia

Randy C. Huffman, Cabinet Secretary, Department of Environmental Protection
David Flannery, Jackson Kelly, PLLC
Ronald R. Potesta, President, Potesta and Associates

Federal

Kenneth S. Komoroski, Partner-in-Charge, Fulbright & Jaworski, LLP

**As of June 30, 2013. An updated list of ORSANCO's Commissioners is available at www.orsanco.org.*



Jeanne Ison



Donna Beatsch



Jerry Schulte



Lila Ziolkowski



Greg Youngstrom



Rob Tewes



Paul Spires, Sr.



ORSANCO staff members participate in the 2013 River Sweep.



Chairman Ken Komoroski presents the past chairman's flags to outgoing Chairman Chuck Duritsa.

ORSANCO

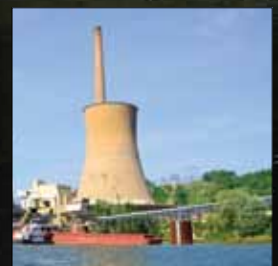
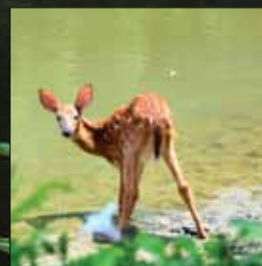
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