



**Ohio River Valley Water
Sanitation Commission
Annual Report 2023
75th Anniversary Edition**

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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 the approval of the Congress of the United States. The Commissioners of ORSANCO respectfully submit the following annual report of activities for 2023 to:

The Honorable J.B. Pritzker, Governor
of Illinois

The Honorable Eric Holcomb, Governor of
Indiana

The Honorable Andy Beshear, Governor of
Kentucky

The Honorable Kathy Hochul, Governor of
New York

The Honorable Mike DeWine, Governor
of Ohio

The Honorable Josh Shapiro, Governor of
Pennsylvania

The Honorable Glenn Youngkin, Governor of
Virginia

The Honorable Jim Justice, Governor of West
Virginia

And the Honorable Joe Biden, President of the
United States

*As of June 30, 2023

Chair's Message

It has been a pleasure and an honor to serve as Chairman of the Commission, particularly during its 75th anniversary year. The 1948 Ohio River Valley Water Sanitation Compact has certainly stood the test of time.

For 75 years, ORSANCO has been dedicated to improving the water quality of the Ohio River Basin through its numerous water quality monitoring programs and successful partnerships. ORSANCO's distinctiveness and success is due to its collaboration across member states and agencies that represent the people and waters of the Ohio River Basin.

This year has been an important milestone for ORSANCO as it celebrated 75 years of protecting and promoting the vital uses of our region's most valuable asset. Looking back on the deplorable state of the

Ohio River prior to the foundation of ORSANCO, it is incredible to see its transformation into one of the most diverse rivers in the country from an ecological perspective, and arguably among the most resilient. ORSANCO, its Commission, and partner agencies came together to celebrate the 75th anniversary through a community event that highlighted the work being done on the Ohio River and throughout the basin, as well as a commemorative video and publication that detailed the historic outlook and current state of the Ohio River from a scientific perspective.

In February, ORSANCO worked ceaselessly to respond to the East Palestine train derailment and its impact on the Ohio River. Following the spill, an internal sampling plan to track and profile the plume was created. Over the next several weeks, over 130 non-routine samples were collected and analyzed, and all data was made



available to the public. The collaboration between ORSANCO, partner agencies, and water utilities provides invaluable, timely protection against threats to our drinking water supply-of which, over 5 million people rely upon daily.

Issues concerning persistent chemicals such as PFAS are not unique to the Ohio River, however their presence and effect on the aquatic ecosystem is something that needs continuous monitoring in the future. Moving forward, ORSANCO's monitoring of PFAS will be expanded upon in its river-wide broad scan survey as well as be included in fish tissue sampling.

I am confident that ORSANCO will continue to rise to the challenges and deliver on protecting water quality throughout the basin, hopefully for another 75 years or more!



Toby Frevert
Toby Frevert



WHO WE ARE



ORSANCO Staff Technical Programs



Richard Harrison,
P.E., Executive
Director & Chief
Engineer



Tracey Edmonds,
Administrative
Assistant



Jason Heath, P.E.,
Technical Programs
Director



Sam Dinkins,
Technical
Programs
Manager



Stacey Cochran,
Environmental
Scientist III



Greg Youngstrom,
Environmental
Scientist III



Emilee
Harmeling,
Environmental
Scientist I



Jamie Tsiominas,
Environmental
Scientist/Organics
Detection System



Lila Xepoleas
Ziolkowski,
Analytical Chemist,
Quality Assurance



Ryan Argo,
Technical
Programs
Manager



Rob Tewes,
Senior Biologist



Bridget
Borrowdale,
Aquatic Biologist



Daniel Cleves,
Aquatic Biologist



Bridget Taylor,
Environmental
Scientist II

Administrative Programs & Human Resources



David Bailey,
Director of
Administration &
Human Resources



Adam Scott,
Computer
Systems
Administrator



Joe Gilligan,
Comptroller



Nick Guthrie,
Accountant



Annette Shumard,
Communications
& Environmental
Education Manager



Nick Callahan,
Environmental
Education
& Outreach
Specialist



Sarah Segars
Public Information
& Outreach
Specialist



Matt Glazer,
Building
Maintenance,
Part-time

Founded in 1948, the Ohio River Valley Water Sanitation Commission (ORSANCO) and its eight member states is an interstate water pollution control agency that works to improve water quality in the Ohio River Basin. ORSANCO operates monitoring programs to ensure the river can be used for drinking water, industrial supplies, recreational purposes, and can support a healthy and diverse aquatic habitat.

The Ohio River Basin supports 30 million people, covering more than 200,000 square miles. The streams, tributaries, and mainstem of the Ohio River connect communities across the region by providing opportunities for recreation, economic development, and a critical aquatic habitat for over 160 species of fish and other wildlife. The river is the backbone of the environment, the economy, the culture, and the history for the communities that live along its banks and throughout the region. ORSANCO and its incredible partners have devoted 75 years of effort with great successes and are dedicated to continuing to protect and promote the vital uses of our region's most valuable asset.

The ORSANCO Foundation for Ohio River Education (FORE) is a 501(c)(3) non-profit created to achieve environmental education, public information, and outreach goals. FORE uses STEM based education to teach 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 waterways.

WHO WE ARE



Members of the Commission



Chair
Toby Frevert
Illinois



Vice Chair
John M.
Hoopingarner
Ohio



Executive Director
and Chief
Engineer
Richard Harrison,
P.E.



Sec./Treasurer
David Flannery
Steptoe &
Johnson, PLLC
West Virginia



Federal
George
Elmaraghy



Federal
Tom FitzGerald
Director, Kentucky
Resources Council



Federal
David Miracle,
Environmental
Manager, Nucor



Illinois
John Kim
Director, Illinois
EPA



Indiana
Joseph H.
Harrison, Jr.
Dentons Bingham
Greenebaum, LLP



Indiana
John Kupke



Indiana
Brian
Rockensuess,
Commissioner,
Department of
Environmental
Management



Kentucky
Spencer Bruce,
President & CEO,
Louisville Water
Company



Kentucky
Jacqueline
Coleman
Lieutenant
Governor



Kentucky
Rebecca
Goodman
Secretary, KY
Energy and
Environment
Cabinet



New York
Douglas E. Conroe
Executive Director,
Chautauqua Lake
Association Inc.



New York
Basil Seggos
Commissioner,
New York
Department of
Environmental
Conservation



New York
Michael P. Wilson



Ohio
Holly Christmann,
Assistant County
Administrator for
Hamilton County,
Ohio



Ohio
Anne Vogel
Director,
Ohio EPA



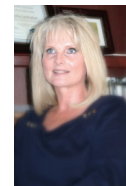
Pennsylvania
Michael G.
Forbeck, Senior
Regulatory
Advisor, Tetra Tech



Pennsylvania
Richard Negrin
Secretary,
Pennsylvania DEP



Pennsylvania
Davitt Woodwell
President,
Pennsylvania
Environmental
Council



Virginia
Lou Ann Jessee-
Wallace
Virginia Water
Control Board &
Owner of Design
Printers



Virginia
Mike Rolband
Director,
Virginia DEQ



West Virginia
Ronald R. Potesta
President, Potesta
and Associates



West Virginia
Harold Ward,
Cabinet
Secretary, West
Virginia DEP

* As of June 30, 2023. A current list of ORSANCO's Commissioners is available at www.orsanco.org.

ORSANCO 75TH ANNIVERSARY

As ORSANCO celebrates its 75th anniversary this year, it is important to reflect upon the improvements achieved in water quality in one of our region's most valuable resources, the Ohio River. These improvements are due to the passion and investment of our staff, partners, and wonderful stakeholders. The river has made a remarkable recovery since ORSANCO's creation in 1948. Looking forward into the future, there is certainly more work to be done and ORSANCO is ready for the challenges that lie ahead.

The Ohio River Basin is home to over 30 million people, and the Ohio River has played a critical role in the industrial growth of the United States by serving as a major transportation route and providing a plentiful source of water. An unfortunate side effect of this growth has been a significant, consistent pollution predicament. Predating the Clean Water Act by 24 years, ORSANCO's primary focus in its early stages was facilitating and championing the construction of sewage treatment plants. This allowed for the treatment of pollution that was directly discharged in the Ohio River Basin's waters. This situation essentially made the Ohio River largely an open sewer prior to ORSANCO's creation 75 years ago.

Today, there are remarkable improvements in the water quality of the Ohio River Basin interstate waters. As described by ORBA Vice President and Director of Thomas More University Biological Field Station, Chris Lorentz, the Ohio River has transformed into "one of the most vibrant, resilient ecosystems in the country, as evidenced by its ability to support a rich assemblage of aquatic life, provide an abundant source of clean drinking water, and offer recreational opportunities, such as boating and fishing, for the surrounding communities, on top of serving as a major transportation corridor."



ORSANCO celebrated the 75th anniversary during a Commission meeting on June 28th, on the anniversary of our compact signing, with an environmental festival at Cincinnati Parks' Smale Riverfront Park in downtown Cincinnati. The celebration kicked off with a press event, hearing from local officials who partner with ORSANCO and share the common goal of improving and protecting the water quality of the Ohio River and the interstate waters of the Ohio River Basin. This collective partnership was most recently demonstrated in their response to the East Palestine train derailment spill which was addressed by Anne Vogel, Ohio Environmental Protection Agency, Director. This event brought together over 20 of our partner agencies, featuring educational and interactive booths that drew more than 300 members of the public. Also featured was our Life Below the Waterline traveling aquarium full of Ohio River Fish.

Looking ahead to the future, there are water quality challenges as well as the complex issue of solving pollution problems across Ohio River Basin state boundaries. ORSANCO is uniquely positioned to address Ohio River challenges associated with bacteria, harmful algal blooms, legacy pollutants such as PCB's, dioxins, and mercury, as well as emerging chemicals of concern such as PFAS chemicals in order to help ensure our future generations will be able to rely upon and enjoy this great river.

75th Anniversary Event Sponsors

Taft Law and Nucor

Individual Sponsors

ORSANCO Commissioner John Hoopingarner
ORSANCO Commissioner Bruce Herschlag
Former ORSANCO Commissioner Jeffrey Eger

ORSANCO Commissioner Michael Wilson
ORSANCO Retired Staff Member Jerry Schulte
ORSANCO Executive Director Richard Harrison
ORSANCO Foundation President David Bailey

*All sponsorship from the event will support the ORSANCO Foundation for Ohio River Education



WHAT WE DO



The Ohio River Watershed

Water Quality Monitoring Programs



ORSANCO operates numerous water quality monitoring programs to help ensure 4 designated uses of the Ohio River are protected (drinking water, industrial supply, recreation, and support of aquatic habitat). The Ohio River Basin is home to more than 30 million people and the Ohio River is a primary source of drinking water for about 5 million people. Our monitoring programs encompass bacteria monitoring, emerging contaminants, as well as biological surveys to assess the health of the aquatic habitat in the Ohio River.

Emergency & Spill Response



The Ohio River is a working river, providing the necessary water resources to support industries for manufacturing, energy, natural gases, and fuel production. Through the 20 locks and dams on the Ohio River, more than 184 million tons of cargo are transported annually. With the substantial industrial and commercial uses of the river, there is a significant threat for releases and discharges of pollutants. ORSANCO's Organics Detection System (ODS) monitors the Ohio River mainstem and select tributaries for volatile organic compounds (VOCs) daily. Additionally, ORSANCO receives spill reports on a 24 hour basis from state and federal agencies, in which information is then relayed to the states and utilities whose drinking water may be impacted.

Public Information and Outreach



The communication and environmental education programs at ORSANCO develop, coordinate, and disseminate public information, education, and outreach activities throughout the Ohio River Basin. ORSANCO staff work with each program to compile complex water quality information regarding a wide variety of topics and customize for public distribution via the ORSANCO website, various media channels, and print publications. The goal is to create strategies that deliver public information in a manner that improves the perception of the Ohio River water quality and promote the protection of its vital uses and make data accessible to the public.

Water Quality Monitoring Programs

- Bimonthly Water Quality Sampling
- Clean Metals
- Contact Recreation Bacteria
- Harmful Algal Blooms (HABs)

Additional Sampling

Dissolved Oxygen

ORSANCO monitors dissolved oxygen and temperature at 13 Ohio River locations from May-October annually. Data is received from electronic monitors at navigational dams operated by the US Army Corps of Engineers and hydropower plants. ORSANCO also deploys Hydrolabs (remote monitoring sondes) at three locations: Newburgh, J.T. Myers, and Smithland. All data is compiled and analyzed to ensure ORSANCO's criteria are met for the protection of warm water aquatic life.

- The minimum D.O. concentration shall not be less than 4.0 mg/L at any time
- Average D.O. concentration shall be at least 5.0 mg/L for each calendar day
- During the April 15-June 15 spawning season, a minimum concentration of 5.0 mg/L shall be maintained at all times.

Legacy & Persistent Chemicals

Dioxins are extremely persistent compounds that break down slowly in the environment. Dioxins are toxic chemical compounds that are byproducts of industrial and manufacturing processes. Although environmental levels of dioxins have decreased in the last 30 years, they are extremely persistent compounds and break down slowly.

PFAS

Per and Polyfluorinated Substances (PFAS) are widely used, long-lasting chemicals, components of which break down slowly over time. These compounds can be found in water, air, soil, and living organisms at low levels everywhere in the world.

Broad Scan Survey

The Broad Scan Survey, last completed in 2012, is underway in 2023. This two part survey takes place at three locations along the Ohio River. This survey tests for 114 pollution control standard analytes in both high and low flow conditions. The high flow conditions were sampled in May at all three locations, and sampling will resume in September for the low flow conditions. This program is meant to identify pollutants with criteria that should be routinely monitored for in the Ohio River.

- Upper – Parkersburg (river mile 193)
- Middle – Louisville (river mile 633)
- Lower – Paducah (river mile 912)



40

of PFAS included
in ORSANCO's
2023 river-wide
broad scan survey

35

of PFAS
monitored for in
fish tissue

6

of PFAS in
drinking water that
USEPA plans to
legally enforce the
limits of

BIMONTHLY PROGRAM

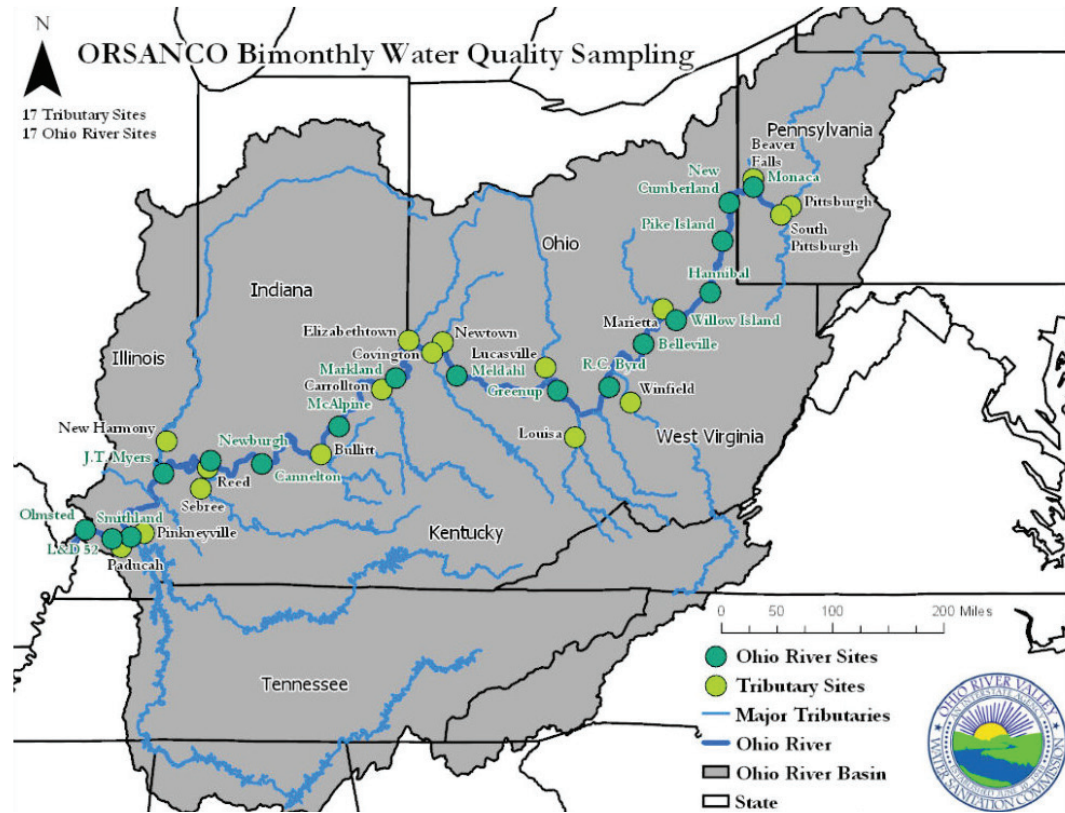
The Bimonthly Water Quality Sampling program began in 1975 and has continuous records through the present day. Samples are collected during every odd numbered month of the year.

33
sampling
sites total

17
Ohio
River sites

16
tributary
sites

22
parameters
tested for



How we do it!

River water samples are collected as near to the centerline of the river as possible from lock chamber, guide walls, bridges, and in some cases from raw water intake lines. To sample from outside structures an acid, distilled, and native water-rinsed bailer, stainless steel bucket, or Kemmerer sampler is used with sufficient nylon rope attached to reach the river surface. Samples are transferred from the collection device to a likewise triple-rinsed ten-liter plastic carboy. The sample water is distributed from the carboy to sample bottles, each containing preservative if required by the analytical methods to be employed.



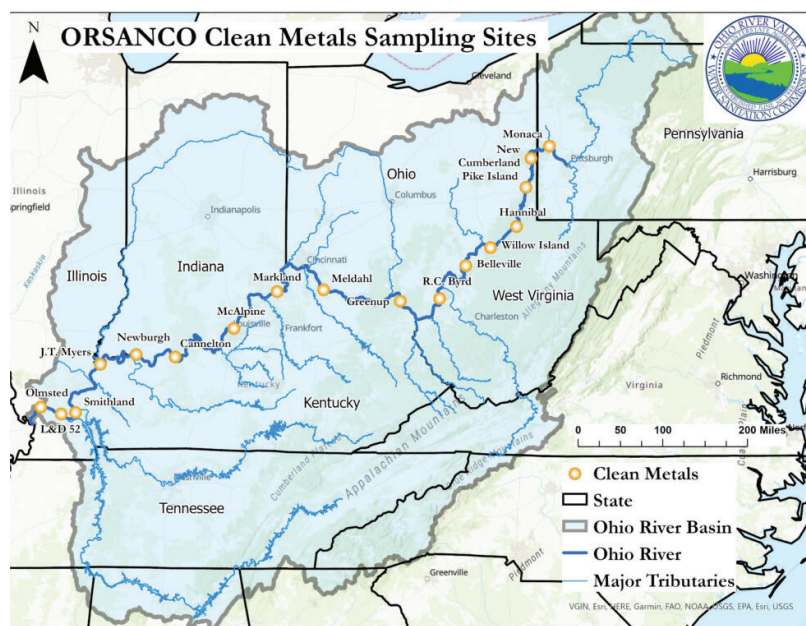
CLEAN METALS PROGRAM

The Clean Metals program was initiated in 1988 to allow for metals analysis at very low levels on the Ohio River. Data is used to assess compliance with water quality criteria, and to evaluate the river's ability to support fish and macroinvertebrates.

- Sampled alongside bimonthly samples

5
metals tested for (dissolved & total)

17
Ohio River sites total



How we do it!

Raw water samples are collected directly through a tubing with a pre-cleaned and self-filling 4L collection bottle for dissolved and total recoverable metals. Use of this equipment eliminates a sampler's direct contact with the containers and stream sample itself and minimizes exposure of the sample and container to ambient air.



CONTACT RECREATION

ORSANCO assesses whether the river is suitable for contact recreation through monitoring of fecal coliform and E. coli bacteria. Samples are collected from upstream and downstream sites at urban areas with combined sewer systems as well as longitudinal surveys at over 200 sites on the Ohio River. This year, the ORSANCO Ohio River Bacteria Trends Report will be updated to include data from 2001-2022.

It is recommended that swimming or other recreational activities that involve contact with the water are limited in impaired sections of the river, as well as following a large rain or snowmelt event. However, due to the significant improvement in Ohio River water quality, many events take place in or around the river annually. ORSANCO provides bacteria monitoring for Paddlefest and the Great Ohio River Swim to help ensure the safety of those coming into contact with the water during these events.



13

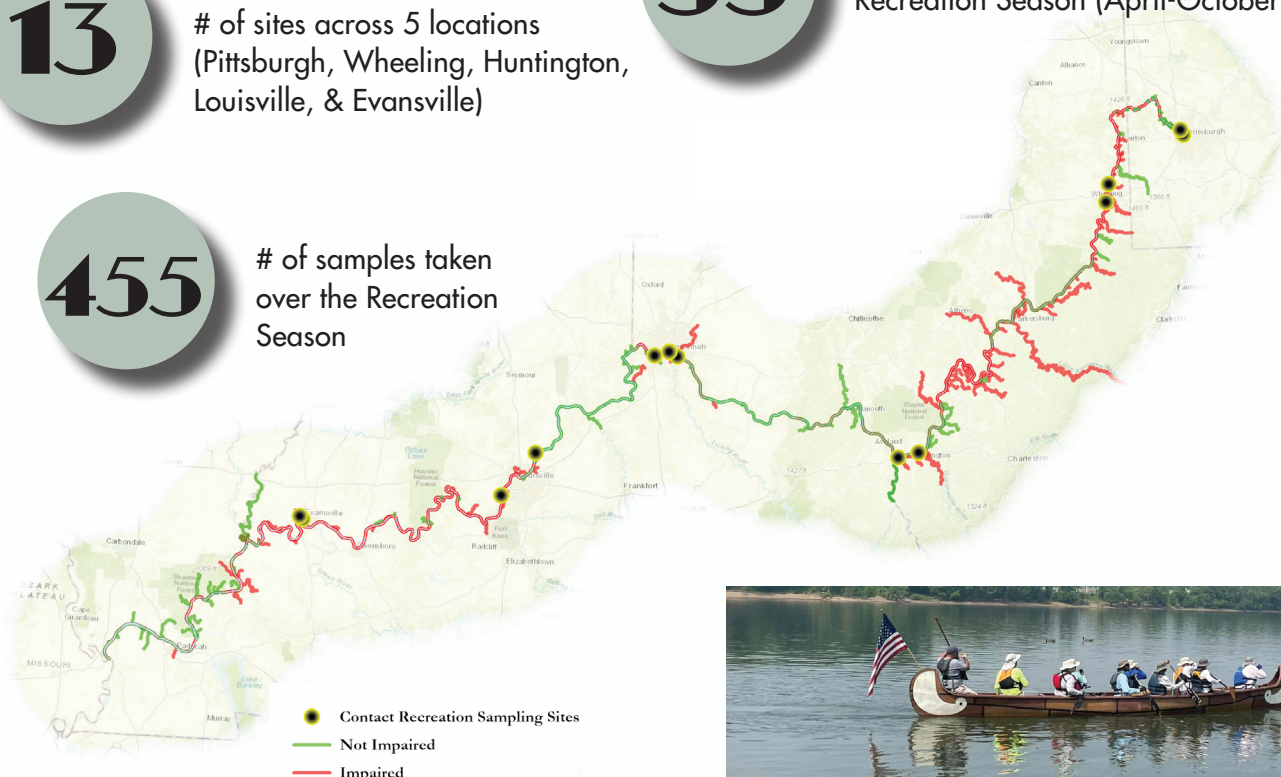
of sites across 5 locations
(Pittsburgh, Wheeling, Huntington,
Louisville, & Evansville)

35

of weeks in the sampling Contact
Recreation Season (April-October)

455

of samples taken
over the Recreation
Season



HARMFUL ALGAL BLOOMS



Nutrients and algae are a natural component of the Ohio River and are present throughout the year. During optimal conditions when nutrients like phosphorus and nitrogen are in excess, and water conditions are low and slow flow, clear, and warm, some algae may proliferate causing a "bloom." Cyanobacteria can produce toxins which can be harmful if ingested by humans or animals. For this reason, an algal bloom consisting primarily of cyanobacteria is considered a Harmful Algal Bloom (HAB).

ORSANCO communicates with water utilities, the U.S. Army Corps of Engineers (USACE), as well as citizens to report the possible occurrence of algal blooms. In order to address the increasing likelihood of potential HABs, in partnership with the U.S. Environmental Protection Agency (USEPA) and Indiana Department of Environmental Management (IDEM), ORSANCO developed a HAB app, an online GIS- based tool, to predict the occurrence of harmful algal blooms on the river.

4

of HAB monitoring stations that operate between June-September

30

of Sensors on monitoring stations collect data every 30 minutes (pH, conductivity, turbidity, dissolved oxygen, temperature, and chlorophyll a)

300

of different species of algae identified on the Ohio River. These algae are divided into 8 taxonomic divisions

DRINKING WATER

Given the industrial and commercial uses of the Ohio River, emergency spill response monitoring and notification is critical to protecting its use as drinking water to the over 5 million users who rely on it daily. ORSANCO's Emergency Response program was established in 1958 and through its 24/7 notification system, it ensures drinking water utilities can have quick response to an incident to safeguard their drinking water supply.



Organics Detection System is a one-of-a-kind network, connecting different drinking water utilities on a river system expanding over 900 miles. This network has offered protection from unreported volatile contaminants to residents all across the basin, including many underprivileged communities, using highly sophisticated instrumentation, with immense communication and cooperation from our partners. ORSANCO's coordination between water utilities and communities, in addition to the training and resources it provides, makes it uniquely indispensable to the protection of our resource, the Ohio River.

The train derailment in East Palestine, Ohio on February 3, 2023, highlighted the significance of our Source Water Protection programs such as Emergency Response and the Organics Detection System. Without these programs in place, ORSANCO would not have been at the forefront of the incident- collecting samples, running sophisticated analysis with quick turnaround time- in order to give the most up-to-date information and notification to drinking water utilities, to better their decisions for the safety of their communities.

19,000

of ODS samples in 2023

358

of spills calls/notifications received by ORSANCO, primarily from the National Response Center. Of those, 214 were incidents involving or relating to water

36

of site visits, which entail repair and maintenance to ODS instrumentation, training for operators, troubleshooting issues, and more

BIOLOGICAL PROGRAMS

3

of pools assessed this year, in addition to open water (J.T. Myers, Olmsted, and Belleville)

15

of sampling locations within each pool (6 sites in open water)

19

of fish tissue samples collected (data used for 305b of the Clean Water Act, Fish Consumption Advisories, and IDEM special project)

The Ohio River is divided into 19 navigational pools that are assessed by ORSANCO biologists on a 5-7 year basis. This year, staff completed the third assessment cycle of all pools, which indicated healthy fish and macroinvertebrate assemblages river-wide. Each survey collects data on habitat, substrate, aquatic vegetation, and fish and macroinvertebrate populations.

In 2023-2024, between the months of June and September, the biological crew will be completing 92 sites across 4 states (OH, KY, IN, & IL) for the National Rivers and Streams Assessment (NRSA). NRSA is an EPA collaborative survey that provides information on the ecological condition of the nation's rivers and streams and the key stressors that affect them, both on a national and an ecoregional scale. These surveys are based on chemical and biological data collected and analyzed using standardized field and laboratory methods. Staff will complete these sites in addition to their annual pool surveys on the Ohio River.

MOST COMMONLY CAUGHT SPECIES



GIZZARD SHAD

A member of the herring family, Gizzard Shad are native to the Ohio River Basin. They are very abundant in the Ohio River, and are an important part of the resource's trophic cascade. The Gizzard Shad gets its name as it possesses a gizzard—a small, rock or sand-filled sack—as part of its GI tract that helps it break down food.



CHANNEL SHINER

Observed in large numbers, Channel Shiners are members of the minnow family and are very common within the basin, particularly in medium to large rivers, including the Ohio.



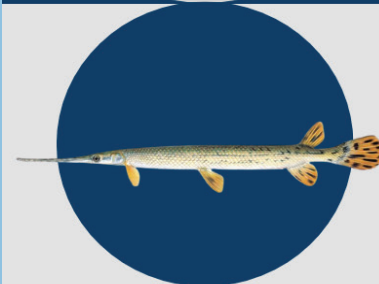
EMERALD SHINER

Present in nearly every Ohio River Survey in 2022, Emerald Shiners are native to North America and are very common in large rivers and lakes. The Emerald Shiner gets its name from the silvery-emerald color along its sides.



FRESHWATER DRUM

Native to North America and the sole member of the genus *Aplodinotus*, they are an important species within the Ohio River ecosystem. Their diet includes macroinvertebrates, including small mussels. Their full scientific name is *Aplodinotus grunniens*—from Greek for "single back", and Latin for "grunting"—referring to a grunt sound that mature males make.



LONGNOSE GAR

A very unique member of the Ohio River ecosystem, the Longnose Gar features an ancient appearance. It is believed that the species may have been present in North America for nearly 100 million years. Longnose Gar are piscivorous and can grow to nearly 6 feet (1.8m) and over 50 lbs (~25kg).

Electrofishing sampling took place during the index period July–October of 2022. Surveys are conducted at night beginning just after dusk to take advantage of increased foraging activity and diurnal movements of fishes that occur along the shoreline in the evening hours. *Results reflective of 2022 Pool Reports

FISH AND MACROINVERTEBRATE HIGHLIGHTS

NOTABLE CAUGHT SPECIES



RIVER REDHORSE

A somewhat sensitive species, River Redhorse are not as frequently encountered in ORSANCO biological surveys. Their presence is indicative of good stream health, and a sign of favorable habitat conditions. Easily distinguished by its red dorsal and caudal fins, River Redhorse are important to the Ohio River ecosystem.



SILVERJAW MINNOW

Minnows are the most speciose fishes in North America, and the Silverjaw Minnow is another member of the minnow family present in the Ohio River. These are notable catches in the Ohio River as they typically prefer smaller stream habitats with riffles and constant flow, and are not typically observed in large, slower moving rivers.



MISSISSIPPI SILVERSIDE

Rarely encountered in the Ohio River, Mississippi Silversides are most often observed in shallow lakes and reservoirs. These hardy individuals prefer low-flow waters, and their range extends only into the lowest portions of the Ohio River.



BLACK BUFFALO

These important members of the deep-bodied suckers are listed as species of special concern in multiple states. Having to compete with exotic species for food sources makes this native species one of note, as management practices continue to evolve to protect their habitat and ensure their success.

Electrofishing sampling took place during the index period July-October of 2022. Surveys are conducted at night beginning just after dusk to take advantage of increased foraging activity and diurnal movements of fishes that occur along the shoreline in the evening hours. *Results reflective of 2022 Pool Reports

NOTABLE MACROINVERTEBRATE SPECIES



ALDERFLIES

Alderflies are a family of megaloptera, so named for the large wings present on adults, and are closely related to Fishflies and Hellgrammites. Alderfly larvae are aquatic and are often not collected in ORSANCO macroinvertebrate surveys. They possess sharp, stout mandibles used for predation as well as omnivory.



WINTER STONEFLIES

Emerging as adults during winter as their name implies, Winter Stoneflies are unique individuals. They possess anti-freeze compounds within their bodies that enable them to "supercool" without freezing during emergence and adulthood. Typically inhabiting small, fast moving streams, encountering them in our Ohio River collections is noteworthy.



DRAGONFLIES & DAMSELFLIES

8 different species of Odonata, including Anisoptera (dragonflies) and Zygoptera (damselflies) larvae were collected. Among these were individuals of the Family Gomphidae-club tailed dragonflies. More specifically, the largest of the clubtails, *Hagenius brevistylus* aka the Black Dragon Hunter. These are relatively pollution intolerant species and are indicators of good water quality.



MIDGES (35 SPECIES)

Chironomidae, aka aquatic midges, often called bloodworms, are very common in the Ohio River. We collected 35 different species of midges in 2022, evidence to their success and commonality throughout the resource.

Hester-Dendy (H-D) samplers were set out in late August-early September and collected 6 weeks after placement in 2022. Samples were collected and preserved by ORSANCO staff and processed by an independent laboratory. Habitat and environmental conditions including water quality parameters were recorded at each sampling location. *Results reflective of 2022 Pool Reports



FISH CONSUMPTION



Every year, ORSANCO collects composite fish fillet samples from species that are thought to be commonly consumed from the Ohio River mainstem. These samples are analyzed for a variety of contaminants that can bioaccumulate in the tissues of fish. The resulting data are used to provide guidance to states when issuing fish consumption advisories (FCAs). Advisories are state specific, and at times waterbody specific, but typically focus on sportfish – perches, sunfishes, black basses, temperate basses, catfishes, pike, walleye, and salmonids.

A study of polychlorinated biphenyls (PCBs) concentrations in Channel Catfish tissue were examined to determine temporal trends on the mainstem Ohio River. Total PCBs (tPCBs) in Channel Catfish tissue decreased over the 32 year span of the study. However, the degree to which PCBs have decreased is uncertain due to complicated environmental factors that must be considered when using monitoring data for trends analyses.

6

of states involved in fish consumption protocols (All 6 Ohio River mainstem states issue FCAs for their waters including the Ohio River)

5

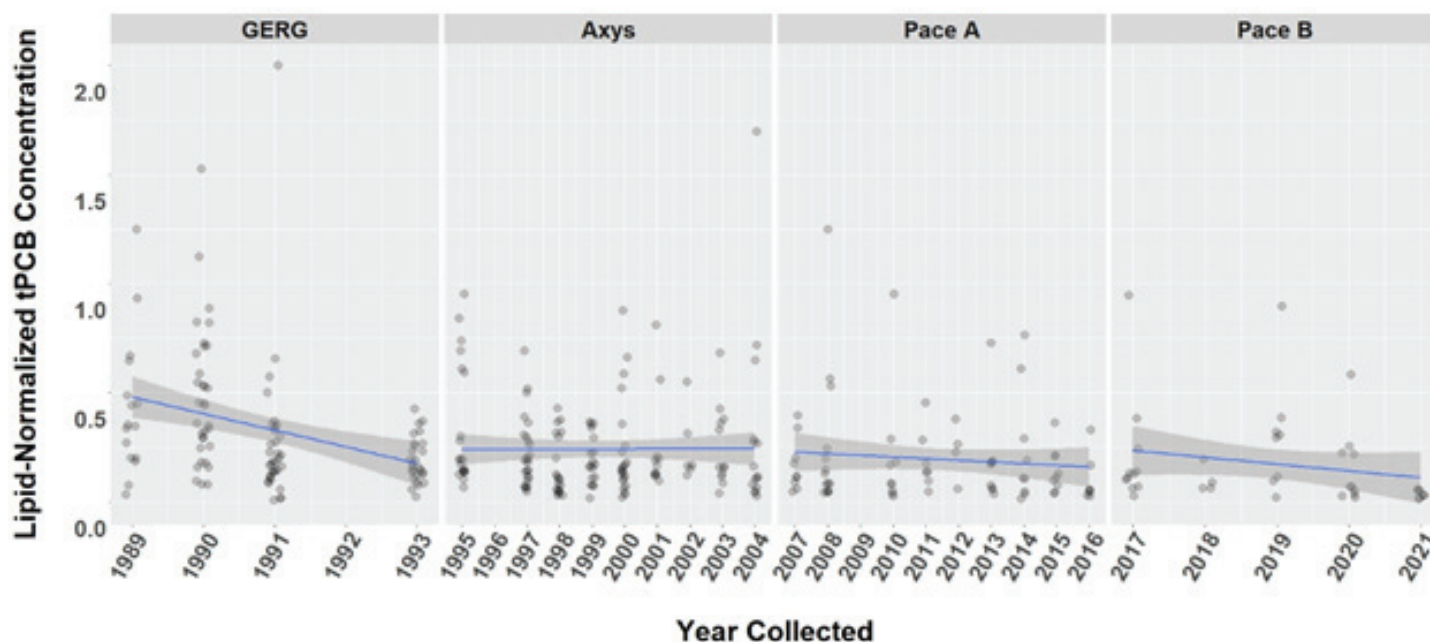
of contaminants sampled for PCB Aroclors, PFAS, Pesticides, Metals- Total Hg, Pb, Cd, Se, MeHg

2,400

of fish tissue samples collected

- o 20 composite samples collected annually from probabilistic pools and fixed station locations as well as special studies conducted to support state partners
- o Over 2,400 Ohio River composite comprising 35 species samples in ORSANCO's database spanning 1983 - 2022

Channel Catfish >35cm 1989-2021



OHIO RIVER SWEEP



The Ohio River Sweep program continued with its seasonal format, hosting events from March 1st through October 31st. This year, Art Academy of Cincinnati students designed the T-shirt logo featuring the eight member states and the iconic Paddlefish! Thanks to the generous donations of our corporate sponsors as well as grant funding, free supplies were provided and shipped to all program participants.



112
Events

5,146
Volunteers

78.03
Tons of Trash
Collected



Ohio River Sweep Sponsors 2023

Antero Foundation
Aqua Ohio
Berry Global
Braskem
Celanese
Centerpoint Energy
Cleveland Cliffs
EQT
Illinois American Water
JSW Steel
Koppers
LG&E KU
Louisville Water
Marathon
Marathon MPLX
Monument Chemical
Louisville MSD
Neville Chemical
North American Stainless
Nucor
Ohio EPA
River Metals Recycling
SDI
Shell Polymers
Southwire

LIFE BELOW THE WATERLINE



3
Events

25
Species
Caught &
Displayed

500
Visitors



The mobile aquarium program is back in action after being out of commission since 2019! Following major repairs to the aquarium in 2022, the program was relaunched in 2023. The environmental education staff are receiving training from the biological staff on aquarium operations with plans to continue to grow the program to host more events to reach a wider, more diverse audience. A new online application is available on ORSANCO's website for event requests. (orsanco.org/education/life-below-the-waterline).

ENVIRONMENTAL EDUCATION

The ORSANCO Foundation for Ohio River Education (FORE) provides environmental education and outreach opportunities to people of all ages. Throughout the year, our education staff worked with communities in Ohio, Kentucky, Indiana, Pennsylvania, and West Virginia. Additionally, grant funding was secured that will allow our boat programs to be offered for free to low income schools as well as replace deteriorating supplies. This year, FORE has had a particular focus on identifying and developing partnerships that will allow us to more consistently serve each of our member states. Two of note this year include a continuing partnership with RiverWorks Discovery, a Mississippi River basin outreach organization, as well as a new partnership with Murray State University's Hancock Biological Station to help serve new regions.

FORE Programs:

- RiverREACH: floating classroom & canoe program
- RiverWatchers: Citizen science water quality testing program
- Educational demonstrations and public outreach events



2,991

of individuals reached through environmental education programs

of education & outreach events

59

30,000

\$ Grant funding received for RiverReach boat programs and River Watchers Citizen science program

PARTNERSHIPS

ORSANCO's greatest strengths and successes can be attributed to its ability to collaborate and work efficiently with the Commission's numerous partners, committees, and stakeholders. ORSANCO and its collaboration with multiple state agencies, complex federal agencies across multiple regions, districts, divisions, water and wastewater utilities, industry, watershed organizations, local jurisdictions, and various other partners throughout the basin has been the key to facilitating significant improvement in the water quality of the Ohio River.

ORSANCO leveraged its partnerships with its incredible stakeholders to effectively respond to the East Palestine, Ohio spill. It was through the combined efforts of the Ohio River drinking water utilities, ORSANCO member states and their governors, the United States Environmental Protection Agency (USEPA), Ohio EPA, The United States Army Corps of Engineers (USACE), and other federal and local partners that ORSANCO was able to demonstrate the chemical spill remnants did not pose a significant health risk to the millions of citizens that rely upon the Ohio River for their drinking water supply.

ORSANCO has worked significantly this year with The Ohio River Basin Alliance (ORBA), a collaborative, unified voice of stakeholders for water resource priorities

of the Ohio River Basin striving to sustain healthy ecosystems and river communities and vibrant water-dependent economies. ORBA leaders from National Wildlife Federation and ORSANCO are drafting an Ohio River Restoration Plan that will attempt to secure federal funding from Congress to restore, protect, and enhance ecosystems within the Ohio River Basin. This is significant because, unlike other key water systems like the Great Lakes, the Ohio River Basin does not receive similar funding from the federal government. The plan will offer a "blueprint" for federal action, including designation of the Ohio River as a protected water system that receives significant, sustained federal investment. The draft plan was shared with the Ohio River Basin Caucus and members of Congress in spring and summer of 2023. On June 13, 2023, ORSANCO joined members of ORBA, USACE Great Lakes and Ohio River Division (LRD), the Ohio River Basin Congressional Caucus, and other partners and stakeholders in the Rayburn House Office Building in Washington, DC for the Ohio River Basin Day on the Hill. The Ohio River Basin Day was a successful event to further engage with stakeholders and key leaders around the basin to develop these regional partnerships and ensure the ORBA strategic initiatives come to fruition, with the assistance of congressional leaders and USACE.

Day on the Hill Speakers



BG Kimberly Peebles
U.S. Army of
Engineers



Craig Butler Muskingum
Watershed Conservancy
District & Ohio River
Basin Alliance



Bruno Pigott
US EPA



Rep. M. McGarvey
Caucus Co Chair



Marty Hettel
American Commercial
Barge Lines



France Mennone
Ohio River Way



Chris Lorentz Thomas
More University &
Ohio River Basin
Alliance



Jordan Lubetkin
National Wildlife
Federation



Jason Heath
ORSANCO



Heather Taylor Miesle
American Rivers



Rep. B. Johnson
Caucus Co Chair

ENVIRONMENTAL JUSTICE



ORSANCO serves to administer fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, policies, and public information dissemination relative to water quality. At the June 16, 2022 Commission meeting, the ORSANCO Commission adopted a 5-year strategic plan that included a goal to enhance ORSANCO's ability to meet the needs of communities with environmental justice (EJ) concerns. To facilitate meeting this goal, the Commission plans to utilize its 501(c)(3) supporting organization, Foundation for Ohio River Education (FORE), through the leadership of an ad hoc environmental justice committee (EJ Committee). The EJ Committee intends to utilize ORSANCO's unique position to facilitate dialogue and outreach within the multi-state borders of the Ohio River Basin.

ORSANCO's compact mission is to protect the water quality of the Ohio River and its tributaries and to provide access to clean drinking water and recreational opportunities to all communities, in particular those

communities bordering the Ohio River which might rely heavily on the river for jobs, fishing, and economic development. ORSANCO and its foundation have a long history of providing environmental education, outreach opportunities, and water quality monitoring and protection services to all citizens and communities within the basin. Since its creation, FORE's programs have focused on providing STEM based education that gets students out of the classroom and on the river to communities who would not have access to this experience otherwise.



A recent illustration of ORSANCO's role in serving communities with environmental justice concerns was demonstrated during the train derailment spill response that occurred on February 3, 2023, in East Palestine, OH. Working with federal, state, and local partners and community residents, ORSANCO's staff and network of supporters responded to the spill in the Ohio River with a mission of providing sampling results to the Ohio River citizens and drinking water utilities to ensure drinking water safety. During this time, ORSANCO's work significantly assisted the Ohio EPA to provide data to several impacted communities in the area and all along the Ohio River. ORSANCO's Spill Detection System ("SDS") enables the agency to support those communities that do not have this type of sophisticated scientific system in place. ORSANCO's SDS was used to help communicate updates on the safety of the Ohio River water quality and related watersheds and helped transform the vicinity of East Palestine and related watersheds from disadvantaged communities with limited knowledge of the risks to the environment into a community capable of addressing the environmental and public health challenges by providing access to the necessary data.

ORSANCO's SDS data has and will assist in providing necessary knowledge to ensure communities have an opportunity to participate in decisions about activities that may affect their environment and/or health; the public's contribution can influence the regulatory agency's decision; community concerns can be considered in the decision-making process; and decision makers can seek out and facilitate the involvement of those potentially affected. ORSANCO is committed



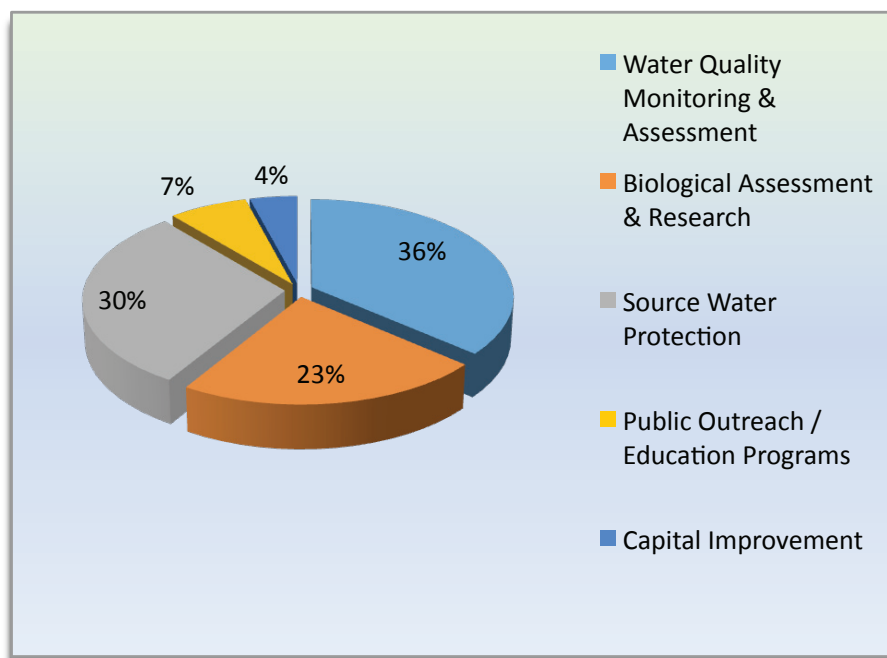
to protecting the Ohio River and providing accessible data and programs for all affected communities and strives to achieve organizational environmental justice goals through our current and future programs as well as our policies, education, and outreach activities.

Significant funds will be needed to continue covering staff time in current program support and future proposed projects. ORSANCO has a highly qualified and trained scientific staff and a vast historical collection of Ohio River water quality data related to aquatic life, human health, and recreational uses that is offered through agency communication, education, outreach, and technical programs. ORSANCO continues to seek funding to accomplish organizational EJ goals to expand the potential chemicals of concern that the SDS applied technology can detect, expand the geographic capabilities of the SDS program to serve communities along the Ohio River watershed, including those in greatest need, expanding ORSANCO's Foundation for Ohio River Education programs throughout the communities of the Ohio River Basin, and improving the ability to communicate with the communities of the Ohio River Basin in order to better understand and address their environmental justice concerns.



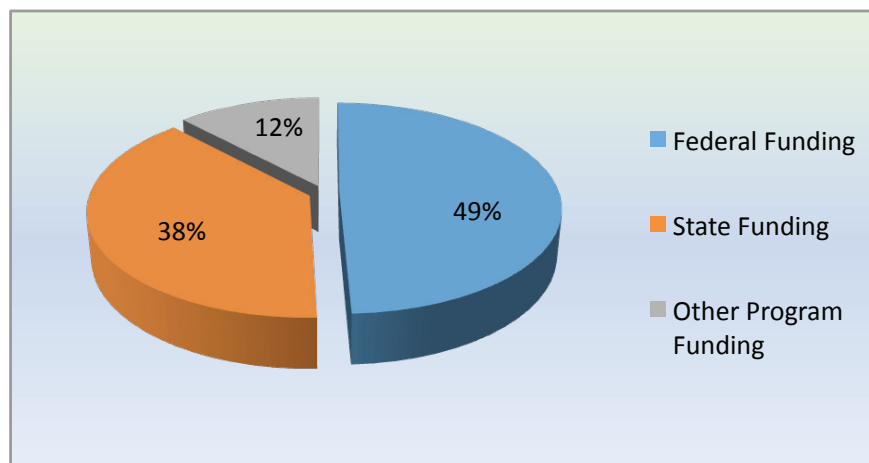
2023 ORSANCO Resources Overview

Budgeted Expenditures by Major Program Area



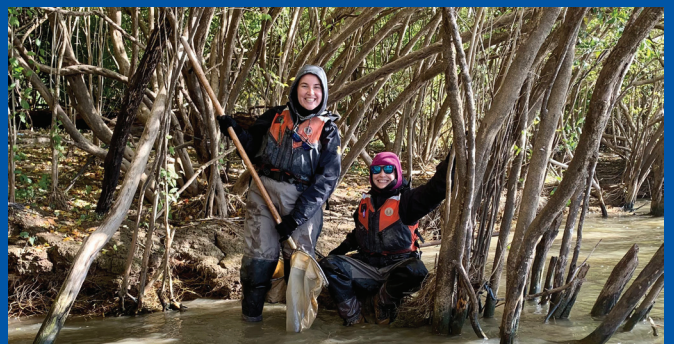
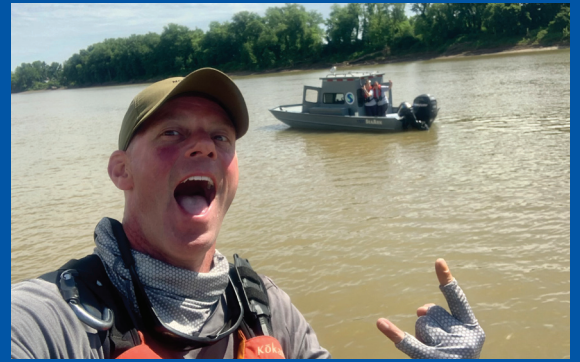
Water Quality Monitoring & Assessment
Biological Assessment & Research
Source Water Protection
Public Outreach/Education
Capital Improvement

Budgeted Resources by Major Source



Federal Funding.....State Funding.....Other Program Funding

Audited detailed financial statements for 2023 will be available in February 2024



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