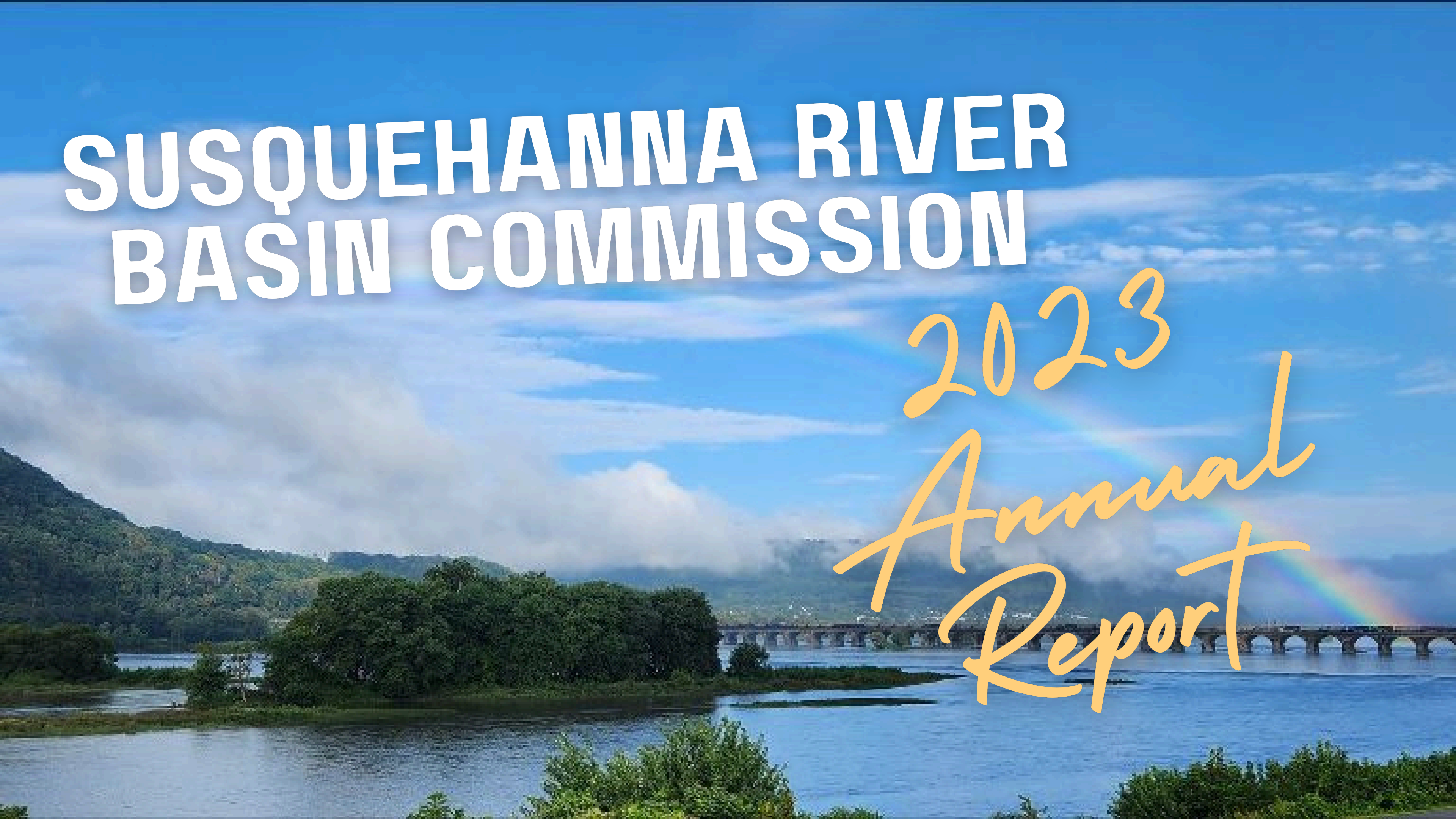


SUSQUEHANNA RIVER BASIN COMMISSION

2023
Annual
Report





WELCOME

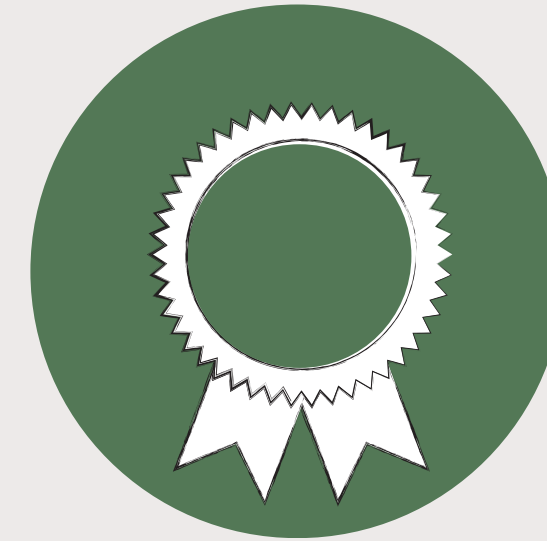
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FINANCIAL
REPORT**



**WHAT'S NEW
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UNITED STATES

Colonel John P. Lloyd

Commander, North Atlantic Division

US Army Corps of Engineers

Alternate: Colonel Estee Pinchasin, Commander and District Engineer, USACE, Baltimore

Alternate: Amy M. Guise, Chief, Planning Division, USACE, Baltimore



NEW YORK

Governor Kathy Hochul

Alternate: Basil Seggos, Commissioner, NY State Department of Environmental Conservation

Alternate: James M. Tierney, Assistant Commissioner for Water Resources, NY State Department of Conservation

Alternate: Lauren Townley, Chief, Water Assessment and Implementation Section, NY State Department of Conservation



PENNSYLVANIA

Governor Josh Shapiro

Alternate: Bevin Buchheister, Acting Deputy Secretary, PA Department of Environmental Protection

Alternate: Susan Weaver, Environmental Program Manager, Interstate Water Resources Division, PA Department of Environmental Protection



MARYLAND

Governor Wes Moore

Alternate: Suzanne Dorsey, Deputy Secretary, MD Department of the Environment

Alternate: Matt Rowe, Assistant Director, Water and Science Administration, MD Department of the Environment

SRBC Directors & Managers

Andrew D. Dehoff, P.E.

Executive Director

John W. Balay, P.E., P.H.

Planning and Operations

Andrew J. Gavin

Deputy Executive Director

Todd D. Eaby, P.G.

Project Review

Marcia E. Hutchinson

Director, Administration and Finance

Gordon D. Lauger

Accounting

Jason E. Oyler

General Counsel and
Secretary to the Commission

Brydon H. Lidle, III

Information Technology

Gene G. Veno

Director, Governmental Affairs &
Public Advocacy

Jeremy M. Hoffman

Compliance & Enforcement

James P. Shallenberger

Monitoring and Protection

WELCOME



Andrew Dehoff
Executive Director

As the Susquehanna River Basin Commission releases its 2023 Annual Report, we reflect on our accomplishments, celebrate achievements, and look ahead to the future. This report is not merely a collection of our achievements but a narrative of our commitment to managing and safeguarding the Susquehanna River Basin. Our impact resonates across an area as vast as a state, underscoring the dedication and expertise of our staff.

In 2023, we intensified our efforts to ensure the sustainability of our water resources, broadening partnerships and grant programs to promote stewardship and conservation. Our most recent grant initiative awarded more than \$150,000 to 34 projects aimed at improving, restoring, and protecting our local watersheds. Since 2021, our grant programs have collectively distributed more than \$13 million for improved water conservation practices, innovative drought resilience initiatives, and watershed restoration efforts.

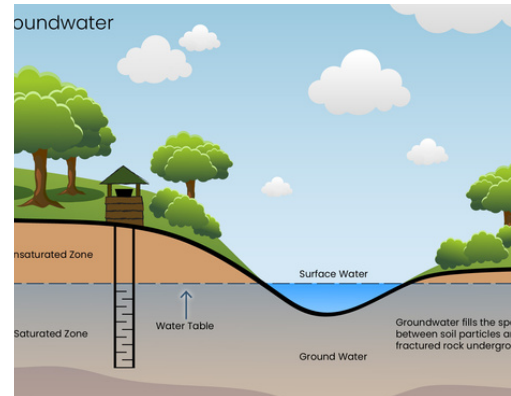
Our successes are a reflection of the collective effort of our team of staff, partners, and stakeholders, highlighting our capacity to manage water use, monitor our waterways, and support cutting-edge research. Our mission to manage and enhance the water resources of the basin is ever-evolving, shaped by the dynamic needs of our aquatic environment and our communities. As we embrace future challenges and opportunities, we are committed to using the latest technology and seeking partnerships to maintain and enhance the resiliency and vitality of our basin's critical water resources.

WHAT'S NEW

2023



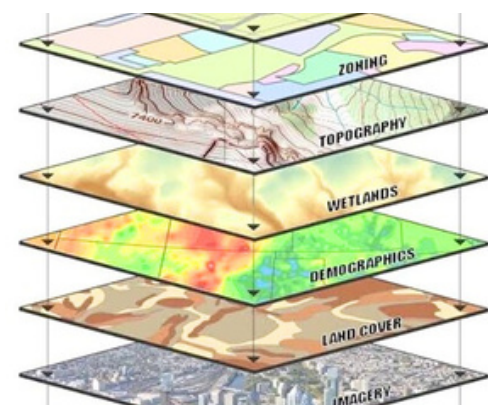
**Public Water
Supply
Reservoir Level
Monitoring
Network**



**General
Permit for
Temporary
Groundwater
Withdrawals**



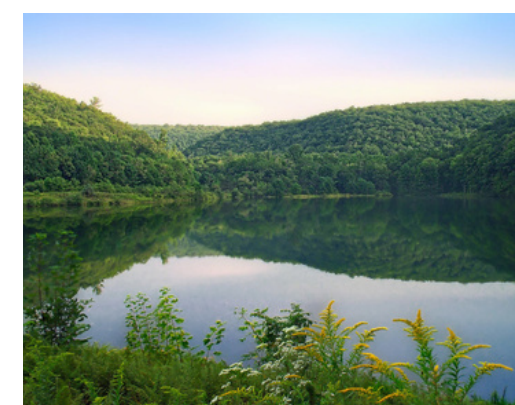
**Chesapeake
Bay Mussel
Partnership**



**Critical Areas
for
Groundwater
Recharge
Identified**



**Stream &
Watershed
Enhancement
Grants**



**"Pay for
Success"
Nutrient
Reduction
Program**

MANAGING DROUGHT: MONITORING LEVELS AT PUBLIC WATER SUPPLY RESERVOIRS

BACKGROUND

- Reservoir storage data help assess drought conditions; however, reservoir storage remains the only indicator not readily available using online monitoring tools.
- 66 key drinking water reservoirs operated by 23 separate public water entities are monitored as part of the Susquehanna River Basin's Drought Coordination Plan (DCP). Roughly 140 such reservoirs are not elements of the DCP.

What's New

- Working through the multi-agency Drought Coordinating Committee, SRBC teamed with PA American Water to build a database framework and interactive web-map that can be used to demonstrate the benefit of tracking reservoir storage information and data-sharing practices.
- SRBC plans to meet with water suppliers to demonstrate the utility of the interactive web tool and encourage more data exchange.
- With greater participation, the goal is to display reservoir storage information in a hydrologic conditions digital dashboard to visualize and interpret data, assess conditions, and inform reservoir operations during times of drought.

What's New

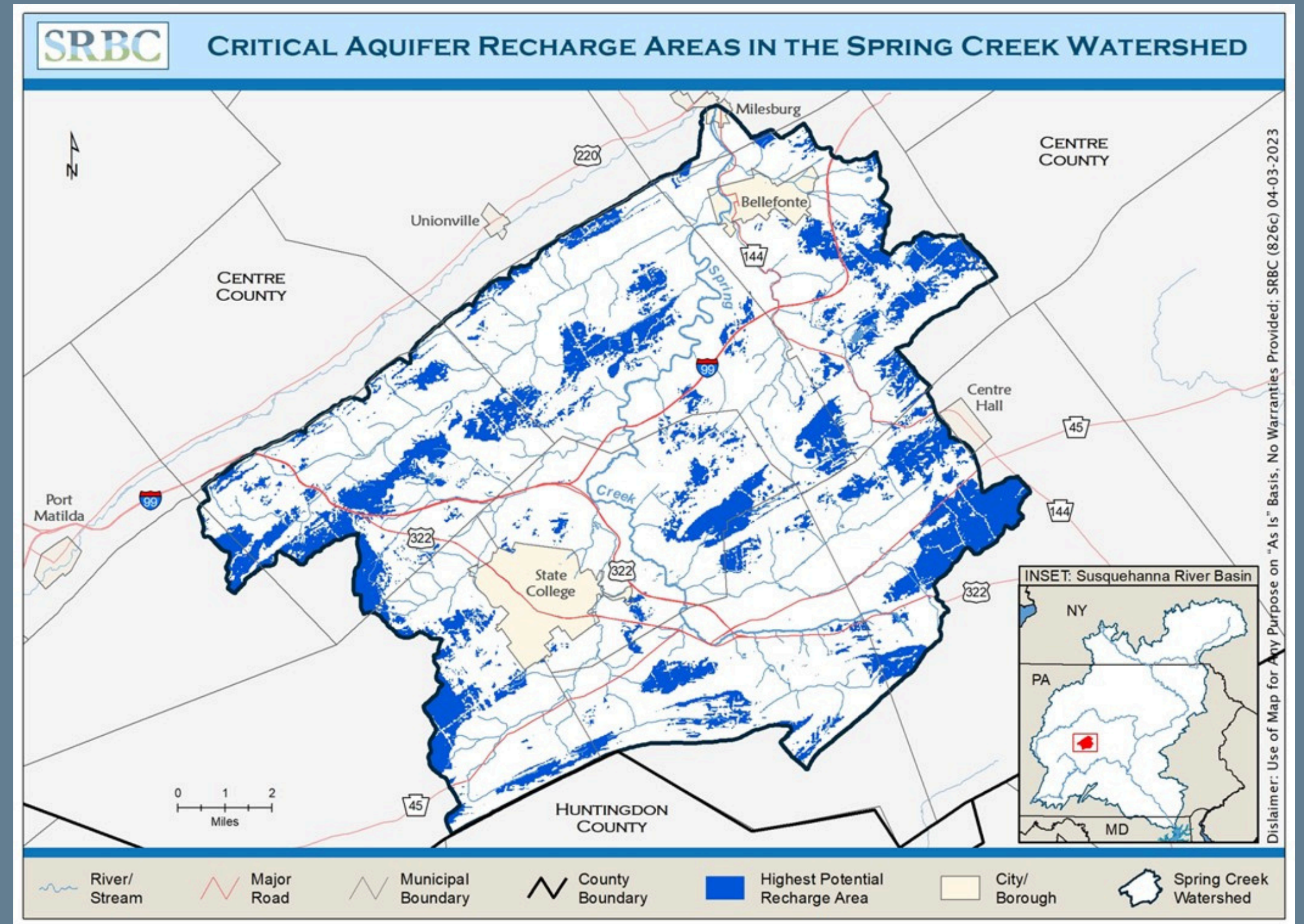
A new SRBC study developed a Geographic Information Systems (GIS) tool that identifies areas of greater and lesser potential for groundwater recharge. The tool incorporates variables that influence recharge, such as impervious cover, slope of the land, sand and clay content in soils, and depth to bedrock.

The GIS framework allows for each input variable to be weighted according to its degree of influence.

The best recharge areas are called Critical Aquifer Recharge Areas (CARAs). The identification of CARAs grows more important as water supply becomes stressed with increased urbanization.

CARAs can be used to inform agricultural and forested land preservation activities, aquifer/stormwater recharge projects, and abandoned mine land reclamation efforts.

USING GIS TO IDENTIFY AREAS OF GROUNDWATER RECHARGE



An example CARA delineation is shown for the Spring Creek Watershed in Centre County, Pa. Local planners and resource managers may consult these delineations when considering preservation, restoration, or enhancement projects.



What's New

BACKGROUND

General Permits (GPs) are issued for a specific category of projects that the Commission regulates instead of issuing an individual approval.

A General Permit streamlines the application and permit review process to reduce costs and increase efficiency. Qualifying criteria and conditions of operation are built in to protect the basin's water resources.

SECOND GENERAL PERMIT APPROVED

SRBC approved its second General Permit (GP-02) that approves the temporary withdrawal of groundwater, generally from back-up wells, for either emergency uses or maintenance activities.

This general permit addresses multiple withdrawal scenarios; for example, an emergency groundwater withdrawal from an unapproved well to extinguish a mine fire or a non-routine groundwater withdrawal to maintain a water supply during repairs to a primary source.

Smoke spills from an abandoned mine feature on ridge of Big Mountain, south of Trevorton in May 2021. More than 400,000 gallons of water were used to diminish the fire.
Larry Deklinski, Courtesy of The News-Item, Scranton, Pa.

STREAM & WATERSHED ENHANCEMENT GRANTS

What's New

SMALL GRANTS: BIG IMPACTS

New grant program for community-based environmental and water resource projects or events that improve, restore, or protect our basin's waterways.

TOTAL FUNDING: \$150,000

34 projects ranging from \$1,500 - \$5,000

Sampling of Projects Funded

- Invasive species management
- Stream buffer establishment
- Conservation outreach to Amish farmers
- Microplastics monitoring & river cleanup
- Mobile field data collection to manage stormwater assets
- Watershed forum
- Water supply road signs

[Read more HERE.](#)

CHESAPEAKE BAY MUSSEL PARTNERSHIP

BACKGROUND

Freshwater mussels are among North America's most endangered group of organisms. Mussels are ecosystem engineers, capable of modifying aquatic habitats for the benefit of both themselves and other species. As they feed, these bivalve mollusks filter the water around them.

DID YOU KNOW?

Various mussel species are capable of mimicking small fish or water bugs in order to lure in fish that then become hosts to the mussel's larvae.

Monitoring & Protection program staff recently became the coordinators of the Chesapeake Bay Watershed Region Freshwater Mussel Partnership.

As coordinators of the Partnership, SRBC staff will be facilitating communications across the group, scheduling meetings and symposiums, managing resources, and coordinating with pertinent elements of the Chesapeake Bay Program.

Read more [HERE](#).

What's New





What's New

SRBC TO ADMINISTER PAY FOR SUCCESS NUTRIENT REDUCTION GRANT PROGRAM

BACKGROUND

- The Conowingo Dam is no longer effectively trapping sediment from reaching the Chesapeake Bay. As a result, more nitrogen, phosphorus and sediment are now entering the Chesapeake Bay during high flow events.
- In 2021, a multi-state Conowingo Watershed Implementation Plan was developed to reduce nutrient and sediment loads.

Under a Memorandum of Understanding with Maryland, SRBC will act as a financing authority to administer a groundbreaking Pay for Success nutrient reduction grant program. Maryland is providing \$20 million to meet nutrient reduction goals of the Conowingo Watershed Implementation Plan.

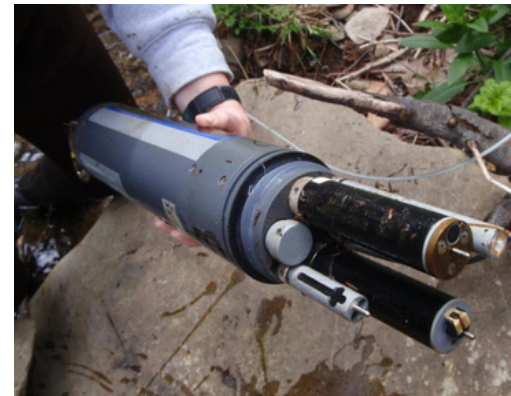
Restoration projects with measured and validated nitrogen reductions will propose a cost per pound in the application process, with the successful proposals being those with the most cost-effective reductions.

PROGRAM MILESTONES

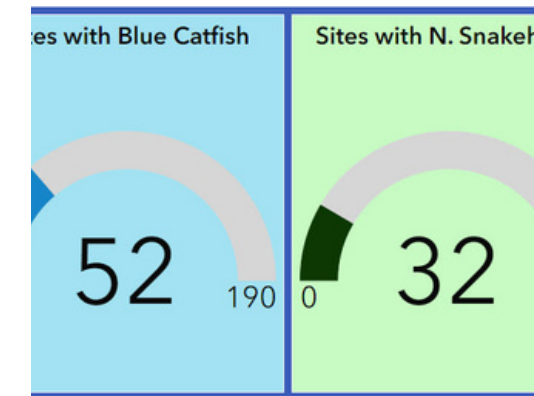
2023



**2nd Round --
Consumptive
Use Mitigation
Grants**



**Trends in
Continuous
Monitoring
Network**



**Tracking
Invasive Fish
Using eDNA**



**3rd Round --
Groundwater
Level
Monitoring
Grants**



**4th Round --
EPA's National
Rivers & Streams
Assessment**



**Wrapping Up
Grandfathered
Water Use
Program**

CONSUMPTIVE USE MITIGATION GRANTS PROGRAM MARKS SECOND YEAR

Milestones

Consumptive Use is water used but not returned to our rivers and streams because it is evaporated, transpired, incorporated into products or otherwise lost.

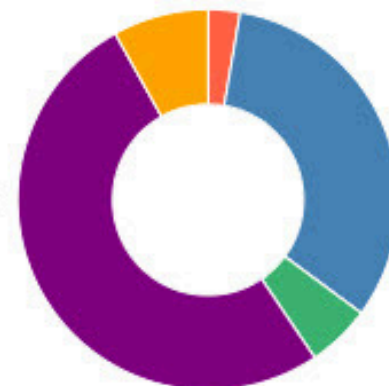
Consumptive Use Mitigation Grants offer funds for projects that reduce water use or increase water availability during critical low flow periods.

The program generally awards about \$6 million in grant funding annually to a variety of projects that improve drought resilience in the basin.

Click [HERE](#) for a list of projects funded in 2023.

Project Types

- Abandoned Mine Drainage Related
- Environmental Site Restoration Related
- Stormwater Best Management Practices Retrofit Related
- Water Conservation Related
- Water Supply Related



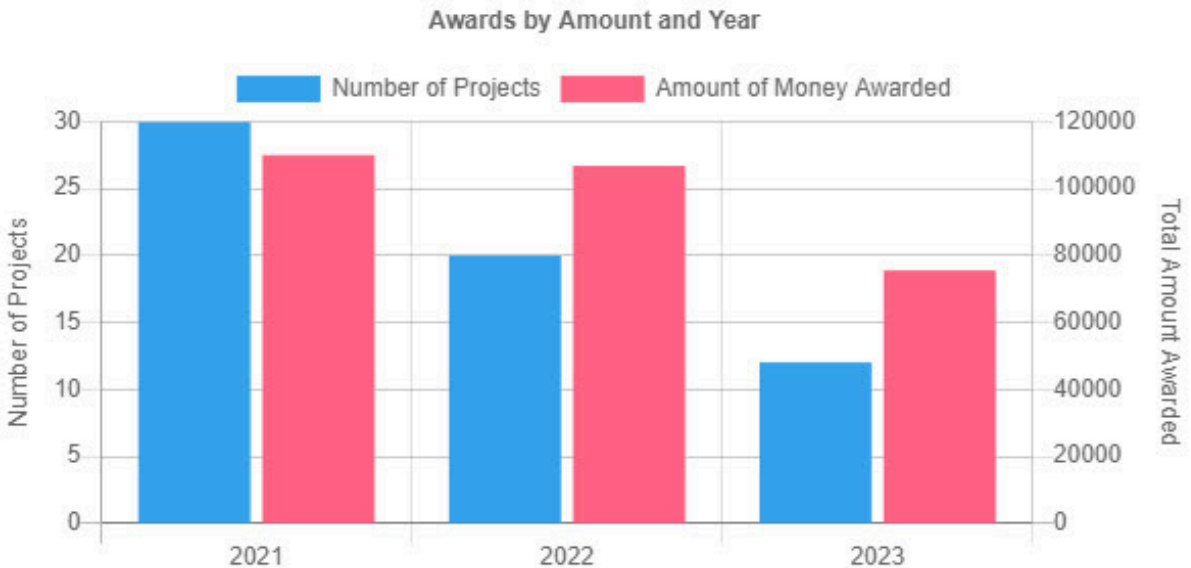
Year	Number of Projects	Money Awarded
2022	14	\$6,587,701
2023	23	\$6,172,515
Total	37	\$12,760,216

DID YOU KNOW?

Applicants requesting less than \$500,000 must provide a cash match of only 10% of total requested funds?

GROUNDWATER LEVEL MONITORING GRANTS FUND 3RD ROUND OF PROJECTS

Groundwater level monitoring grants help municipalities and businesses purchase and install equipment needed to track water levels in their production wells. This aids them during the renewal of their projects with the Commission and with monitoring the performance of their wells to ensure sustainability of their operations.



Year	Number of Projects	Money Awarded
2021	30	\$110,000
2022	20	\$106,757
2023	12	\$75,473
Total	62	\$292,230

CONTINUOUS INSTREAM MONITORING NETWORK: 10 YEARS IN THE WORKS

Milestones

BACKGROUND

At 70 stations, SRBC's Continuous Instream Monitoring (CIM) Network is one of the largest, basinwide, realtime water quality monitoring programs in the country. With 45 of the 70 stations providing 10 or more years of continuous data, SRBC staff looked for trends in 2023.

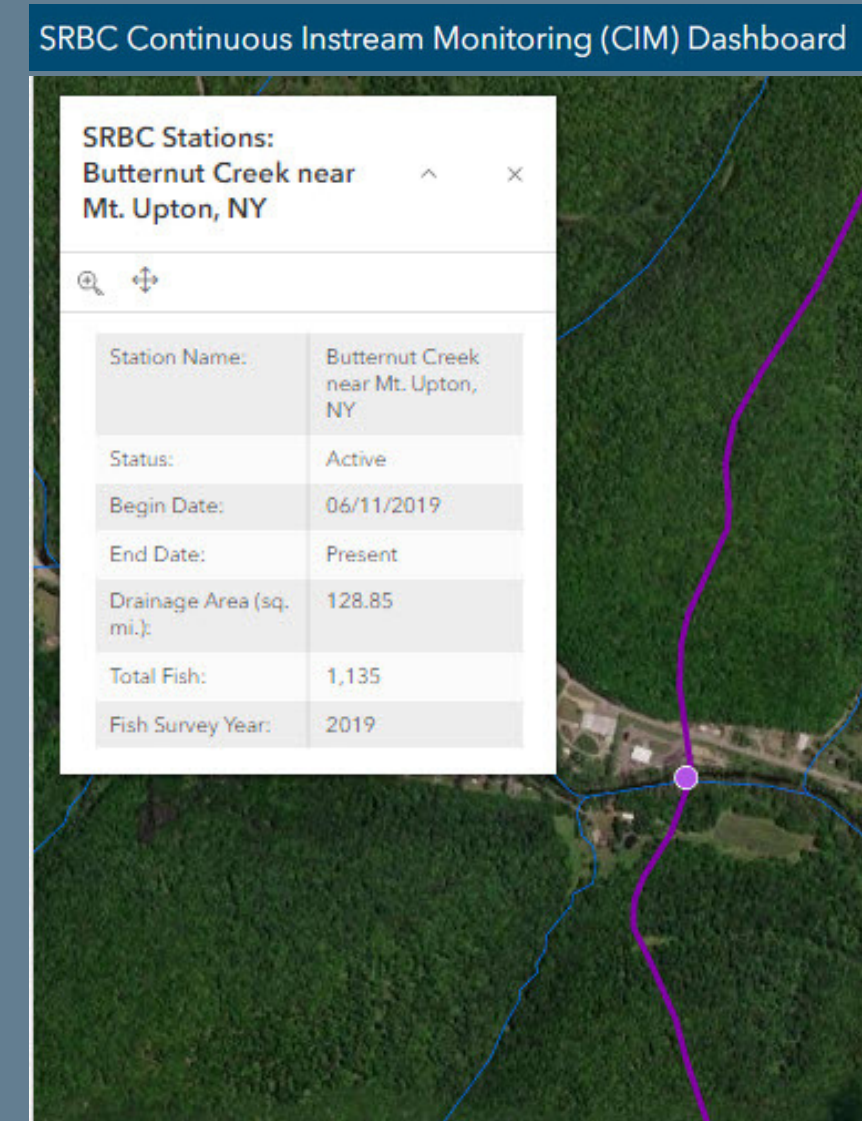
WATER QUALITY PARAMETERS MONITORED

- specific conductance
- pH
- dissolved oxygen
- water temperature
- turbidity

TRENDS IN WATER QUALITY DATA: SOME CURIOUS RESULTS

- A total of 75 water quality trends were observed. Trends were adjusted for seasonality and streamflow in order to determine if water quality is changing over time and if those changes can be attributed to human activities.
- Overall, data showed no significant difference between stations with both increasing and decreasing trends when looking at changes in forest, agriculture, or urban land use, which was unexpected.
- Dissolved oxygen and water temperature have an inverse relationship: as water temperatures rise, DO levels decrease. However, only two of the stations with decreasing DO trends also showed increasing temperature trends.

You can learn more about the CIM network through a summarized [story map](#) or by reading the full [technical report](#) at [srbc.gov](#).



See statistics related to Butternut Creek station in New York at the [CIM Dashboard](#).

SRBC PARTICIPATES IN EPA'S NATIONAL RIVERS & STREAMS ASSESSMENT

BACKGROUND

Every five years, the Environmental Protection Agency conducts a National Rivers & Streams Assessment based on the analysis of physical, chemical and biological data. Its goal is to determine the extent to which rivers and streams support a healthy biological condition and the extent of major stressors that affect them. This is SRBC's fourth round of participation.

In this fourth round of participation, SRBC helped with the sampling of 10 sites in New York in addition to 20 sites in PA.



The program requires extensive training to ensure consistency in following protocols across the country. Each site requires a team of four to six people.



SRBC intern measures the incision height of a stream using a survey rod.

TRACKING INVASIVE FISH USING eDNA

BACKGROUND

With no native predators, invasive species are non-native species that can cause ecological or economic damage to the waterbodies they are invading.

From the collection of a simple water sample, the eDNA from target species can be identified.

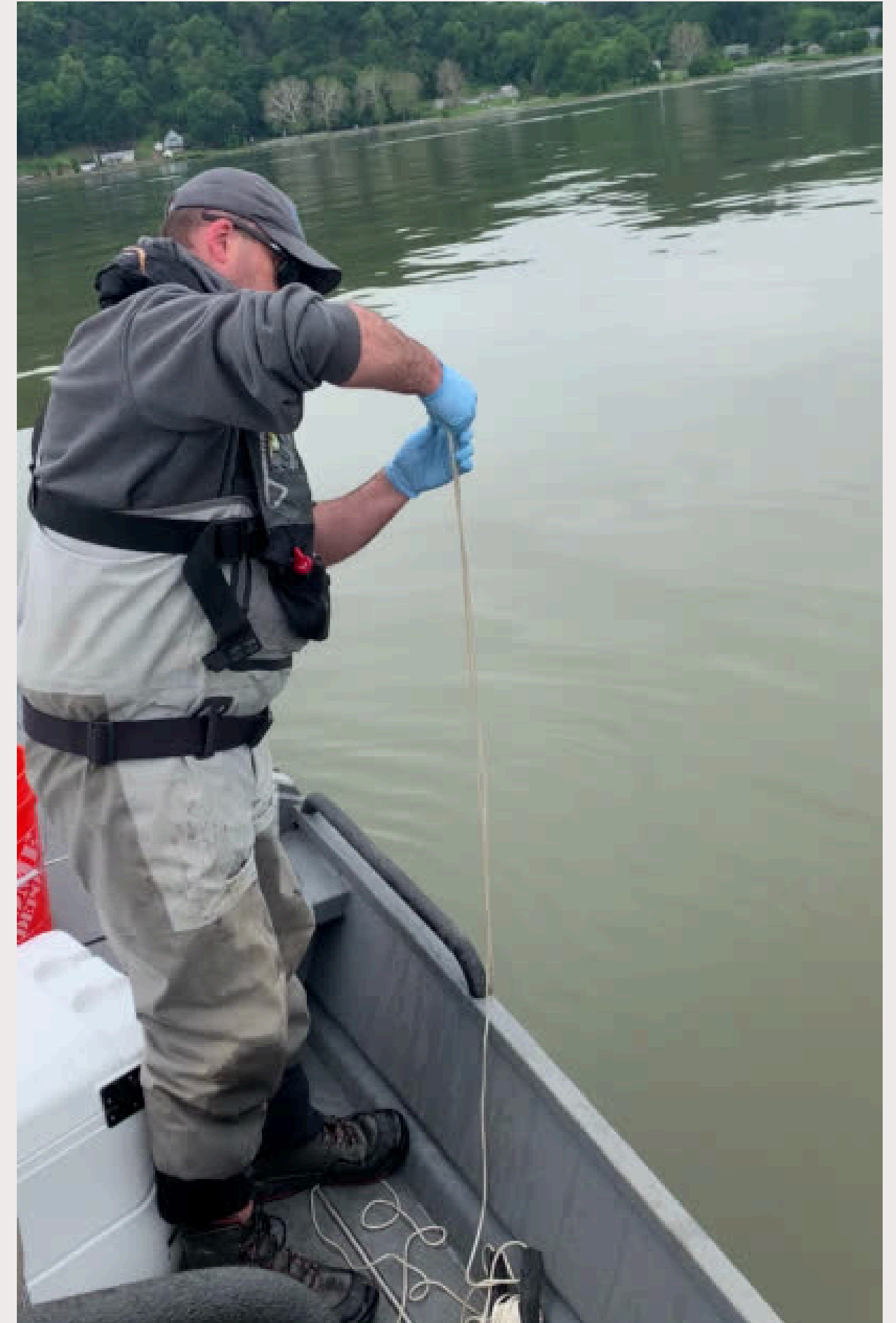


Since 2019, staff are leading the way in using eDNA as a tool to track invasive aquatic species in the basin. Staff surveyed 55 sites in 2023.

While eDNA sampling to date in the Upper Susquehanna Subbasin has not turned up any round goby or northern snakehead, it is important to continue monitoring in an attempt at early detection.

Since 2019, blue catfish and northern snakehead eDNA has been consistently found below Conowingo Dam and in the tributaries that enter the Susquehanna River below the dam.

Visit the [eDNA Monitoring Site Dashboard](#) for site information.



BIG STRIDES IN GRANDFATHERED WATER USES PROGRAM

BACKGROUND

In 2016, a study by SRBC found that there were possibly more than 700 older, unpermitted facilities using nearly one billion gallons of water per day -- as much water as managed by the Commission across the entire basin at that time.

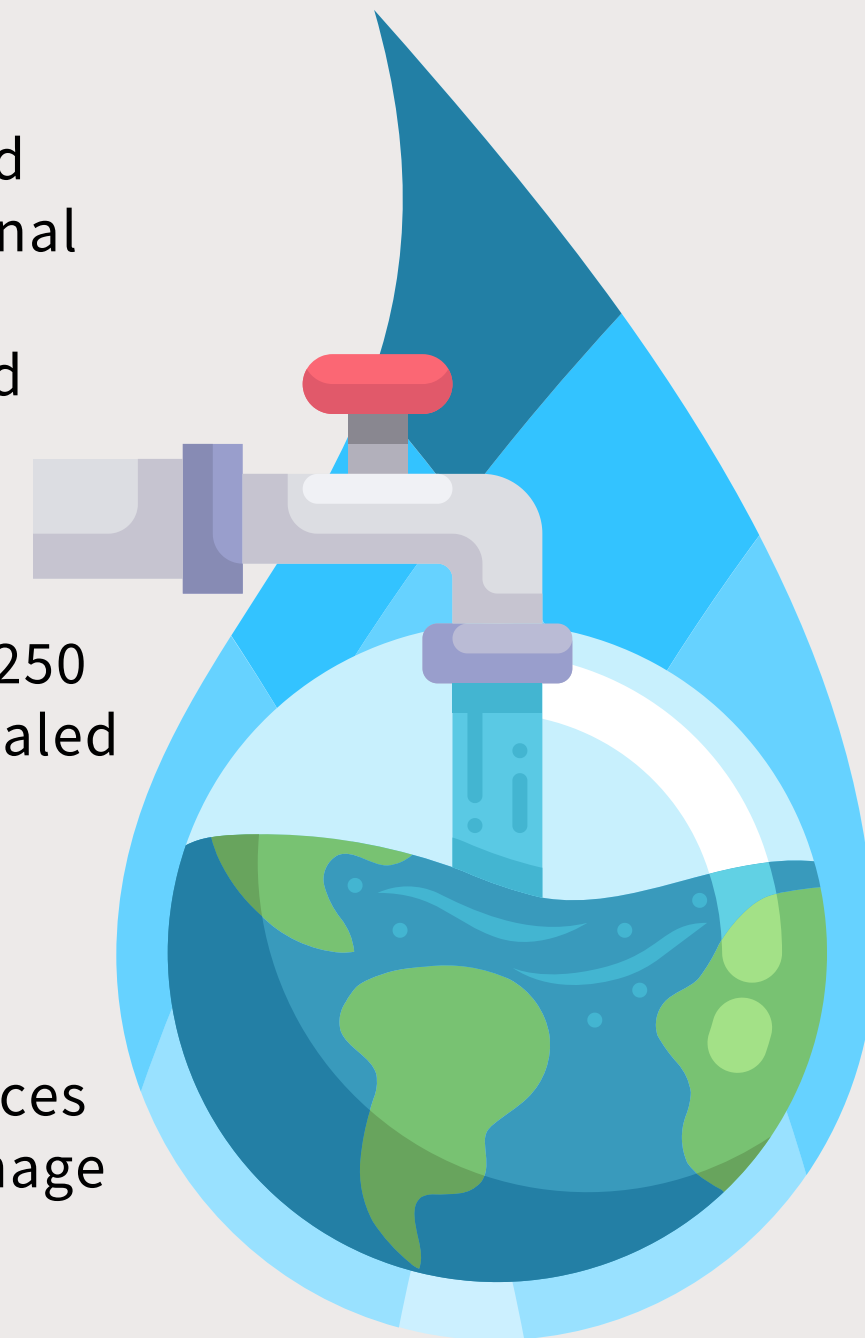
In response, SRBC launched a Grandfathered Water Uses Program to close this significant data gap. Under the program, facilities could register their grandfathered withdrawals and water uses and gain exemption from having to get a permit in the future.

After five years of hard work identifying and evaluating eligibility, staff processed the final 50 registrations in 2023. (There are a small amount of registrations yet to be processed due to the need for either Commission approval or additional data collection.)

In total, the program identified more than 250 facilities in operation whose water use equaled or exceeded the regulatory threshold.

More than 795 million gallons per day, previously unaccounted for, closed a significant knowledge gap, and now enhances the Commission's ability to effectively manage the water resources of the basin.

795+ MILLION GALLONS PER DAY NOW ACCOUNTED FOR IN SRBC WATER MANAGEMENT DECISIONS



OTHER PROGRAM ACCOMPLISHMENTS



MINE DRAINAGE PROJECT FUNDED

Funding came through to begin construction of the Tioga River Active Treatment Plant that will remove metals from mine drainage waters and restore over 20 miles of river.



COMPLIANCE

Large water users are regulated to meet specific withdrawal & use criteria.

In 2023, staff completed:

- 718 site inspections
- 96 compliance actions
- 271 post-approval conditions closed



AMERICAN EELS RESTORATION

Large dams block the migration of the American eel upriver where they mature. Juvenile eels transported upstream of hydroelectric dam eclipsed 2.5 million in 2023.



NAVIGATING FUNDING

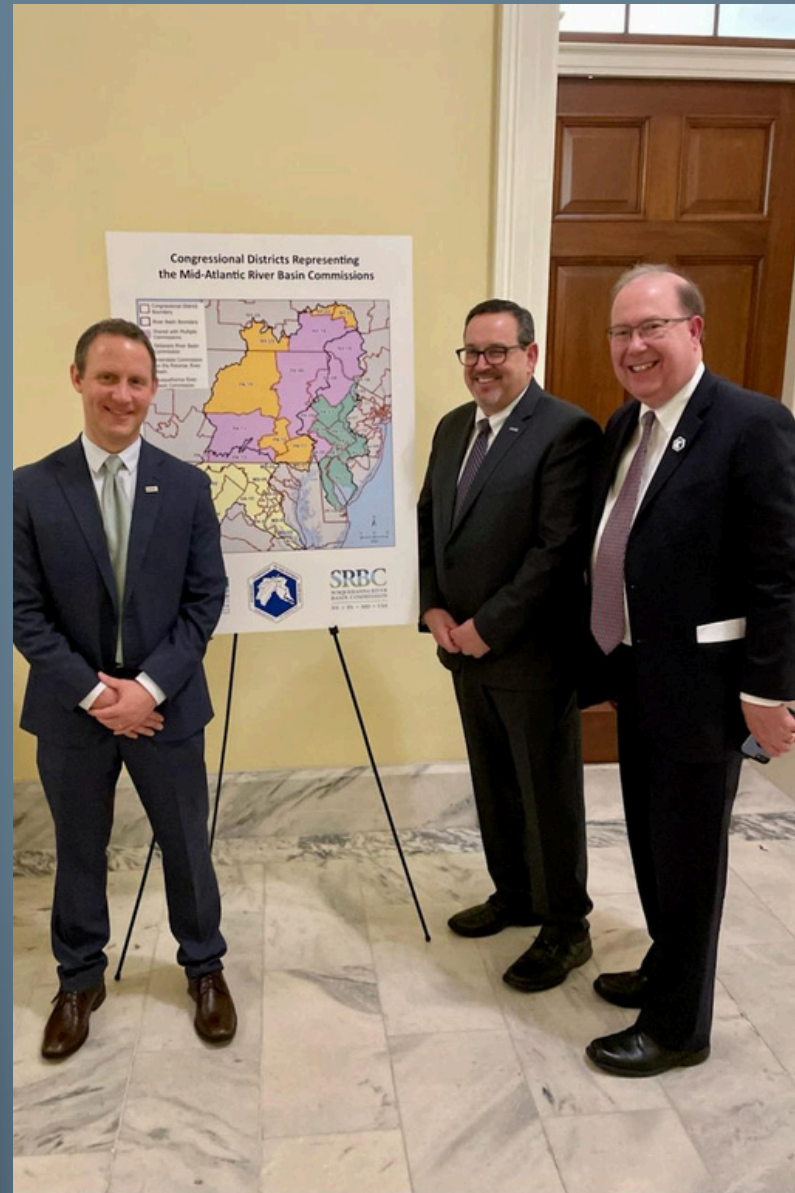
Public Water Supply Assistance staff held two webinars on the ins and outs of available funding and technical assistance for drinking water infrastructure.

GOVERNMENTAL AFFAIRS AND ADVOCACY

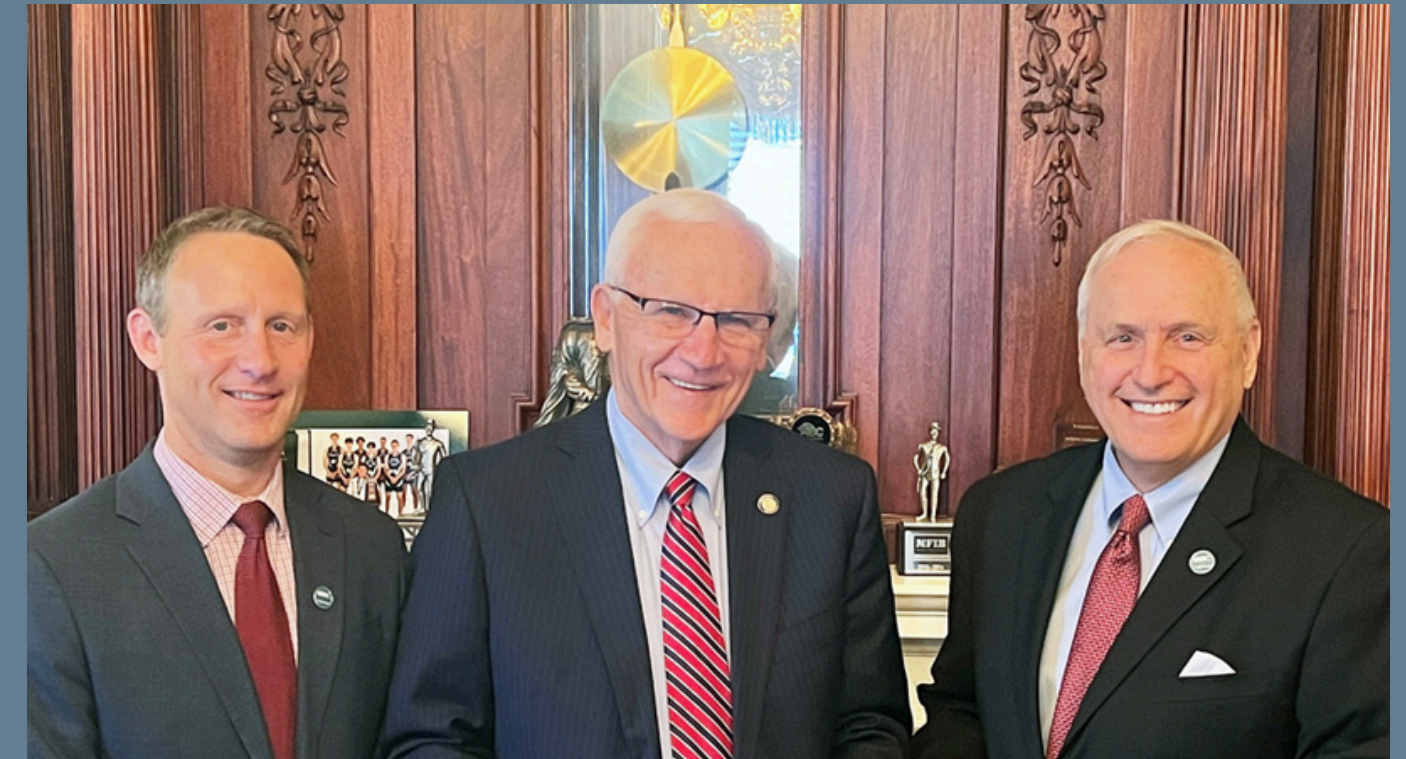
BACKGROUND

The Governmental Affairs and Public Advocacy team engages in strategic advocacy and relationship-building.

In 2023, staff conducted a series of successful meetings with legislators and policy makers across New York, Maryland, Pennsylvania, and in Washington D.C. These efforts were focused on showcasing the diligent work of SRBC employees who tirelessly ensure the river's health and sustainability.



Staff partnered with the neighboring river basin commissions in a congressional briefing in early 2023. Key messages stressed the role that interstate commissions play in water security for more than 25 million people in the Mid-Atlantic region.



Executive Director Andrew Dehoff, The Honorable Gene Yaw, (Senate Environmental Resources Committee Chairman), and Gene Veno, Director of Governmental Affairs



SRBC team collaborates with the Department of Environmental Protection to enhance educational outreach initiatives within the Susquehanna River Basin.

PUBLIC OUTREACH

Educating All Ages



Learning about the river at Wildwood Park's Wetland Festival, Dauphin County, Pa.



Susquehanna Greenway Expo at Shikellamy State Park, Union and Northumberland Counties, Pa.



Staff joined legislators and partner agencies for an informational evening in Sunbury, Pa., on how permitting processes work.



SRBC Hydrogeologist Pierre MaCoy, P.G. inspired future scientists at Shippensburg University's Geography-Earth Science Department Career Day.



Students got their first look at young eels during the Hiwatha's Floating Classroom program sponsored by the Middle Susquehanna Riverkeeper Association.



COLLABORATION & PARTNERSHIPS

Staff presentations in 2023 included:

- Presentation on visualizing large datasets at the National Monitoring Conference.
- Presentations on water conservation initiatives and Dry Cooling technology at the annual American Water Resources Association conference.
- Presentation on monitoring of stream temperature and biological assemblages - part of the Commission's continued climate change initiatives -- at PA Chapter of the American Fisheries Society.



Andrew Dehoff discusses current river basin issues at Penn State Extension's Master Watershed Steward Program Tap Talks.



Staff provided airborne tour narration of the Lower Susquehanna corridor to participants in Choose Clean Water Coalition in Harrisburg, Pa.



Staff participated in bacteria-sampling training with Pennsylvania DEP in northern Pennsylvania.

Networking



Staff
Award



Annual Staff Excellence Award

Jane Block

Hydrogeologist & Project Review

WILLIAM JEANES SR. AWARD

Charlie and Joyce Andrews of Blossburg, Pennsylvania received the William Jeanes Sr. Award from SRBC Commissioners on December 14th, 2023.

Since the 1980s, Charlie and Joyce, backbones of the Tioga County Concerned Citizens Committee (TCCCC), have maintained an unwavering commitment to heal their area waterways.

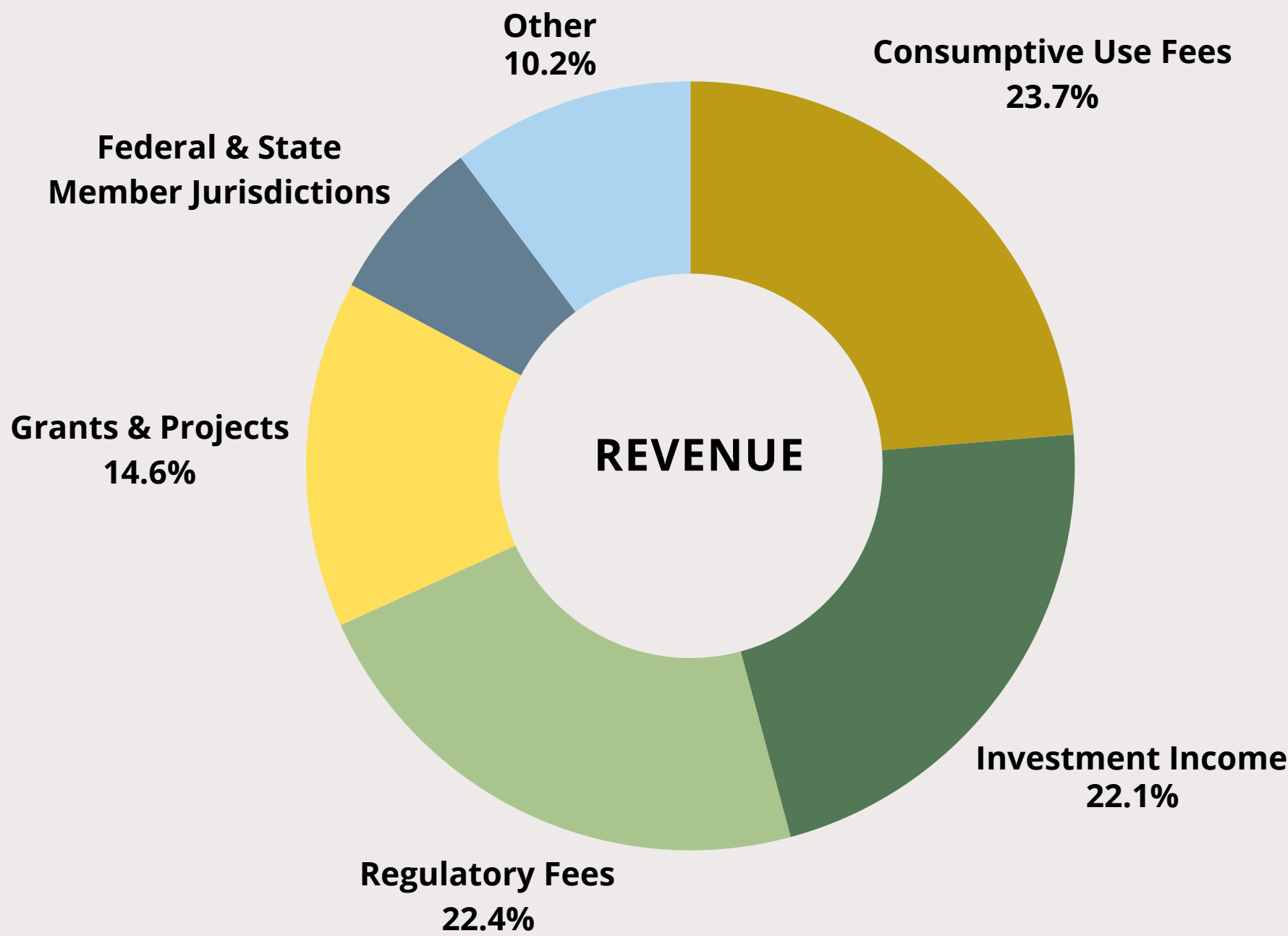
A current project, which includes an active treatment plant that will restore more than 20 miles of streams and tributaries, is being funded by the PA Department of Environmental Protection's Bureau of Abandoned Mine Reclamation, SRBC, the Northcentral Pennsylvania Conservancy and more than \$125,000 of dollars raised by the Andrews and the TCCCC. The plant is being designed by Kleinfelder Inc. and is slated to begin operations by early 2026.

The William Jeanes Sr. Award is named after the late William Jeanes, Sr., a Pennsylvania native who as a Maryland resident was a strong advocate of water quality protection and restoration of the Chesapeake Bay.



Charlie and Joyce Andrews of Blossburg, Pennsylvania

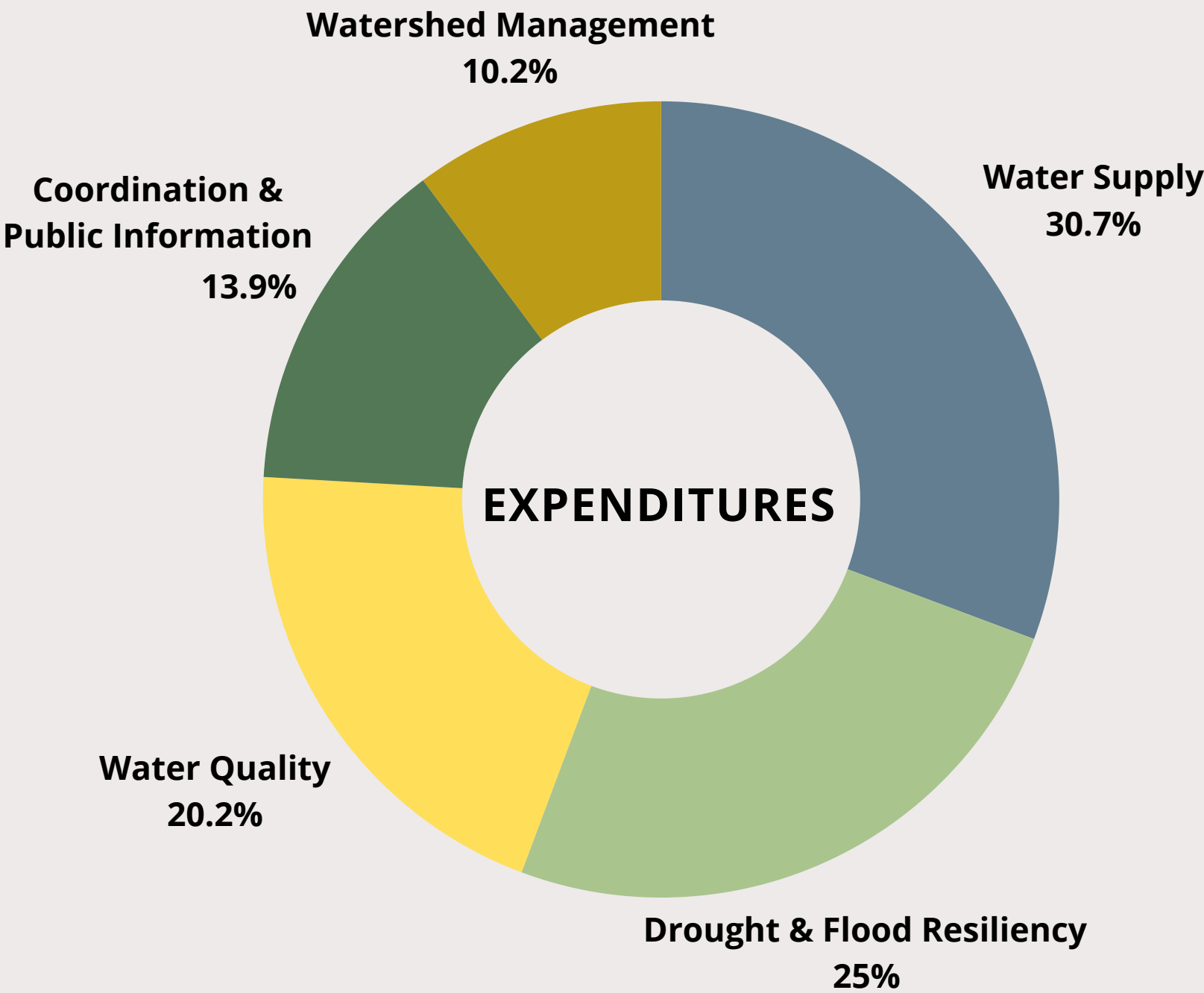
FISCAL YEAR 2023



TOTAL REVENUE: 19,187,484

Change in Commission Fund Balances

Fiscal Stabilization Fund	\$	456,099
Sustainable Water Resources Fund	\$	(1,500,735)
Water Management Fund	\$	2,790,647
Total	\$	1,746,011



TOTAL EXPENDITURES: 17,441,473



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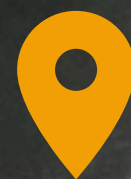
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