



# **ANNUAL REPORT 2024**

**Susquehanna River  
Basin Commission**



**[www.srbc.gov](http://www.srbc.gov)**



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**UNITED STATES**

**Brigadier General John P. Lloyd**

Commander, North Atlantic Division

U.S. Army Corps of Engineers

**Alternate:** Colonel Francis Pera, Baltimore District Commander

U.S. Army Corps of Engineers

**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 Environmental Conservation

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



**PENNSYLVANIA**

**Governor Josh Shapiro**

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

**Alternate:** Jill Whitcomb, 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 and  
Public Advocacy

**Jeremy M. Hoffman**

Compliance

**James P. Shallenberger**

Monitoring and Protection



# Executive Director Message

**As we release our 2024 Annual Report, I'm proud of our continued commitment to innovation and collaboration.**

Our journey through the past year has been marked by significant strides in water resource management, the fostering of new partnerships, and the implementation of pioneering water conservation strategies.

The latter half of 2024 brought low flow challenges to the basin. But new technologies that improve the sharing of data and strengthen outreach propel us forward in our capacity to prepare for managing our water resources through drought conditions. With collaboration a cornerstone of our success, we expanded our network of partners, engaging with local governments, educational institutions, and non-profit organizations to drive meaningful change. These partnerships amplify our impact, allowing us to leverage diverse expertise and resources to improve the basin's vital waterways.

In 2024, we launched several key initiatives aimed at enhancing the sustainability and resilience of the Susquehanna River Basin's water resources. Our research on groundwater recharge and accompanying mapping tools have been implemented by several communities, allowing them to make informed decisions and develop adaptive strategies to plan for long-term viability of economic development balanced with water resource management.

We're looking ahead as well as behind, and we can see new challenges on the horizon as artificial intelligence growth puts large demands on both energy and water availability. As we navigate the complexities of the coming years, our focus remains steadfast on resilience and innovation. We are committed to exploring new technologies and methodologies that will enhance our ability to respond to the dynamic needs of our aquatic ecosystems, while fostering the advancement of our communities. Together with our partners and the dedicated team at the Commission, we look forward to continuing our mission to safeguard the Susquehanna River Basin for future generations.



***Andrew Dehoff***  
***Executive Director***



# Making SRBC Tools Better



New technologies, sharing of data, and outreach among partner agencies are improving SRBC’s capacity to protect the basin against serious droughts and low flow stream conditions.



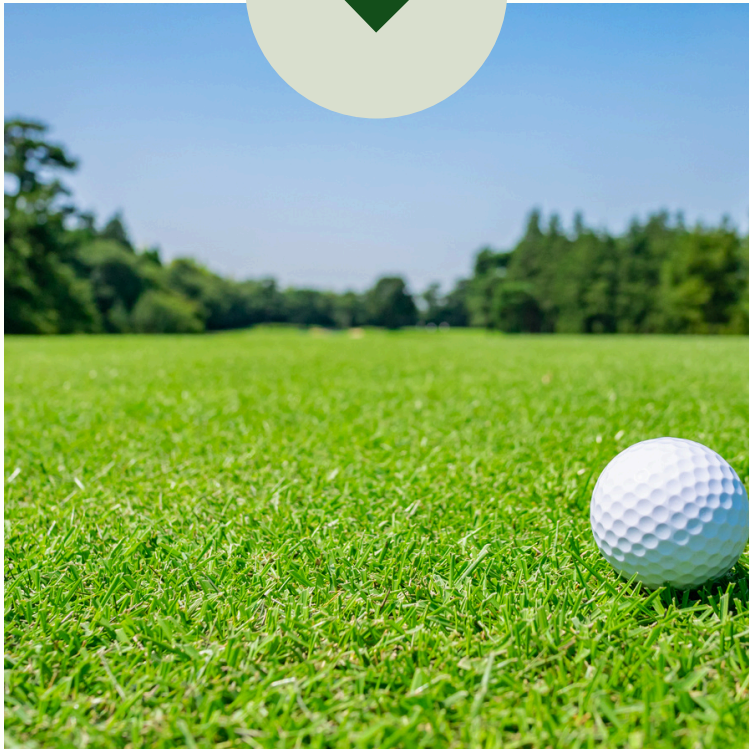
**Low Flow Management Policy Gets Data Boost**



**Drought Monitoring Improves**



**Consumptive Use Mitigation Policy Changes**







## ***Making SRBC Tools Better***

# **Low Flow Data Get Boost**

SRBC partnered with the PA Fish & Boat Commission and PA Department of Environmental Protection to develop a comprehensive dataset that helped them analyze how changes in streamflow affect aquatic communities. The paired datasets enable a more robust evaluation of fish community responses to water withdrawals than any single agency dataset.

Findings include:



**Smaller, high-quality (least-disturbed) stream systems are more vulnerable to withdrawal-related impacts, particularly during low flow conditions, than larger stream systems.**



**The study underscores the importance of the Commission's Low Flow Protection Policy, which offers safeguards during low flow events.**



**A new desktop screening tool is in development.**





*Making SRBC Tools Better*

# Advances in Drought Monitoring

Staff made advancements on creating a basin-specific drought monitoring network, soon to be an online accessible tool. This network will incorporate key drought indicators, including surface water and groundwater levels, precipitation departures, and the Palmer Drought Severity Index (PDSI).

Drought watch, warning, and emergency criteria will be based on the Commission's Drought Coordination Plan (2000).



In 2024, Commission staff engaged eight Public Water Supply (PWS) systems to promote data exchange, with the goal of developing a basin-specific drought indicator for PWS reservoir storage.





*Consumptive use (CU) is simply water that is used but not directly returned to the basin. Consumptive users are required to submit a plan showing how they will mitigate the impacts of their use during droughts and then implement that plan.*

## ***Making SRBC Tools Better***

# **Consumptive Use Mitigation Policy**



Thanks to a recent policy change, certain regulated water users can take advantage of reducing consumptive water use during dry periods to satisfy mitigation requirements – a great option for water users with flexible operations but limited mitigation options.

Staff reached out directly to candidate permitted water users to encourage them to consider altering their operations by reducing their consumptive water use to below the regulatory threshold of 20,000 gallons per day during dry periods. Some users, particularly golf courses, are finding that they can successfully maintain operations at lower water amounts on a short-term basis – a temporary modification that permanently eliminates payment of the mitigation fee!



# Putting SRBC Tools to Work

Targeted outreach and growing success stories have led organizations and agencies to employ SRBC technology to better manage local water resources.



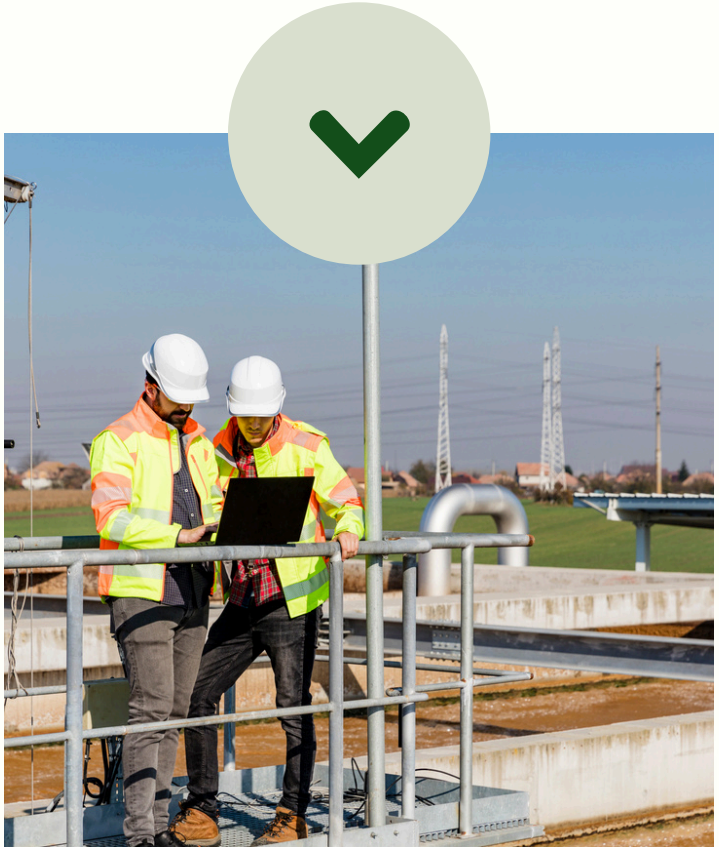
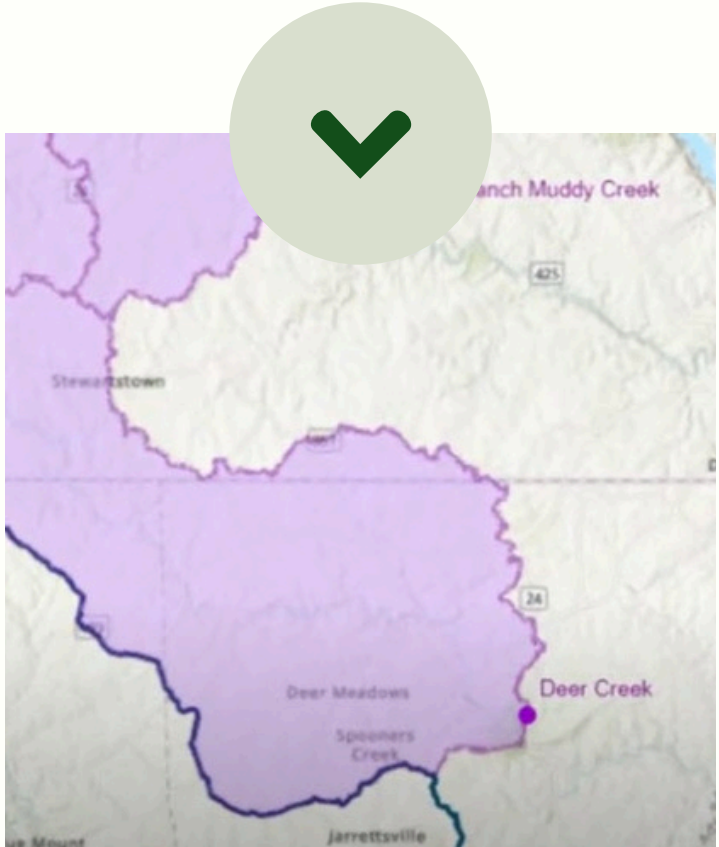
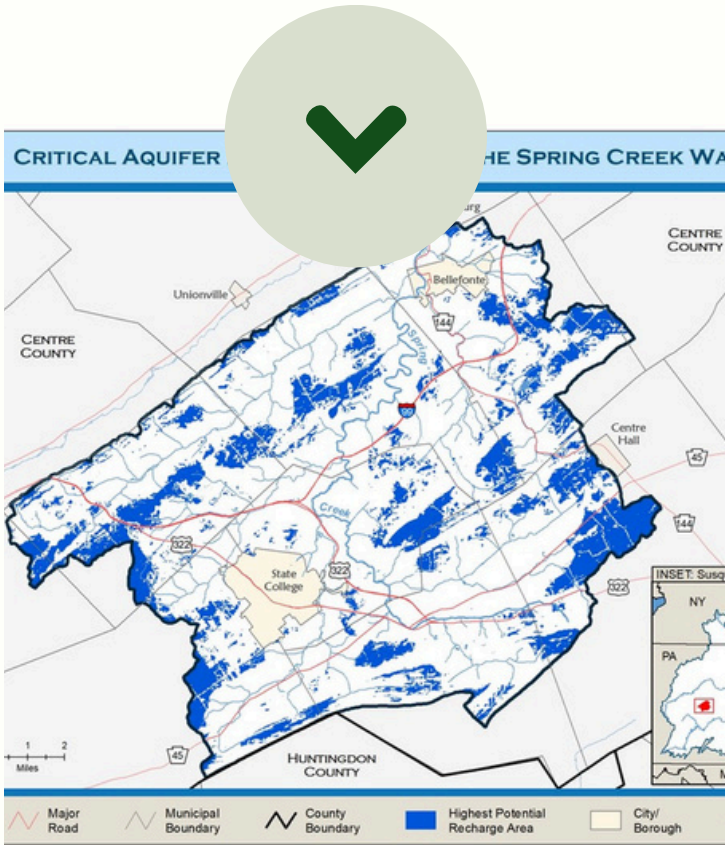
Optimal Groundwater Recharge



New CIM Partners



Public Water Supply Assistance





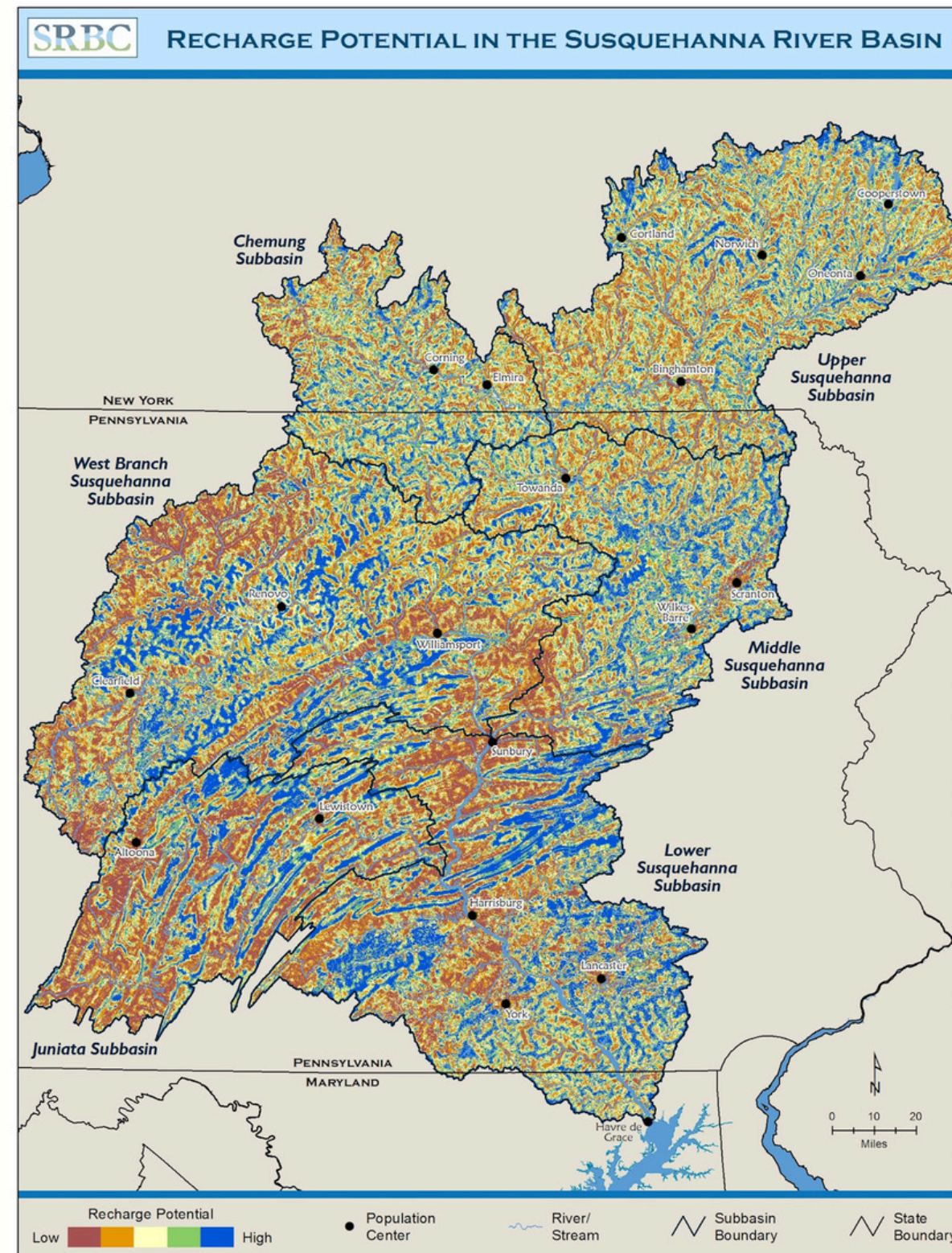


The GIS tool and datasets have been adopted by organizations such as:

- Lancaster County Planning Commission
- Lancaster County Agricultural Preservation Board
- Spring Creek Watershed Commission
- Cumberland County Planning Commission
- ClearWater Conservancy
- Western Pennsylvania Conservancy

## Putting SRBC Tools to Work

# Optimal Groundwater Recharge



A number of organizations have adopted a mapping tool created by SRBC that identifies areas that have greater or lesser potential for groundwater recharge.

The application allows the user to identify areas of higher recharge potential within locations that may otherwise have limited recharge potential.

The Geographic Information System (GIS)-based tool can be used for a variety of purposes – help educate municipal officials, avoid development in potentially over-utilized areas with limited water availability, inform stormwater management practices, and prioritize the purchasing of agricultural and conservation easements.



[CLICK HERE](#) for more information.





## *Putting SRBC Tools to Work*

# New CIM Partners

SRBC's **Continuous Instream Monitoring network** saw two exciting expansions: the first Maryland station and a new Pennsylvania state park station. There are now 75+ active CIM stations in the basin.



Staff installed SRBC's first Continuous Instream Monitoring (CIM) station in Maryland in Deer Creek in Rocks State Park.



SRBC scientists recently partnered with the Pennsylvania Department of Conservation and Natural Resources (DCNR) Bureau of State Parks to install stations both upstream and downstream of the lake at Gifford Pinchot State Park in York County. A station was also installed that monitors lake levels. Overall, the stations will assist park managers with understanding and managing the stream and lake system as a whole.



*The sonde is fixed to the streambank inside a protective tube. Sensor readings are relayed to SRBC's website every 15 minutes.*



## Putting SRBC Tools to Work

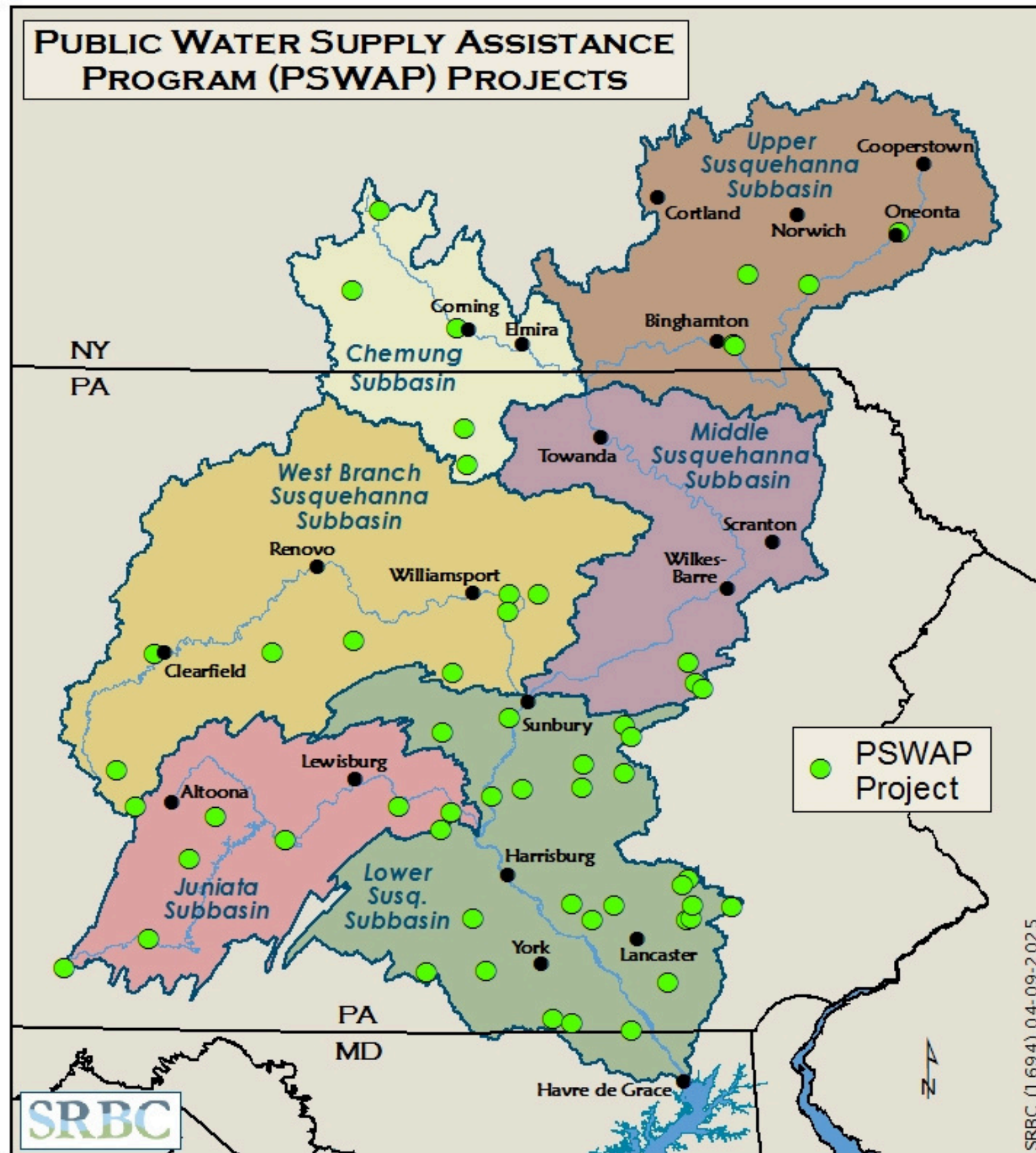
# Public Water Supply Assistance Program

Small municipal public water supply systems – generally less than 10,000 in population – are getting help from SRBC staff in meeting regulatory requirements under the Public Water Supply Assistance Program.

Those systems up for groundwater renewals can get help developing a Voluntary Action Plan, which is a comprehensive review of all the data available to identify any data gaps. This review can then lead to help with impact monitoring or an operational testing plan to fill data gaps and streamline the renewal process.

Many older systems need additional information to bridge the gap between historical data and current operational data to determine if a project is sustainable or could have impacts on other users or the environment.

Staff worked with the PA Municipal Authorities Association to conduct a webinar in May that covered the renewal process, grant opportunities, and how planning can save water authorities time and money.



Staff provided assistance to 48 Public Water Supply providers, of which 35 developed Voluntary Action Plans.

[CLICK HERE](#) for more information. 



# Efficient Operations

Behind the scenes, technological advancements improved internal operations and end-user experiences.

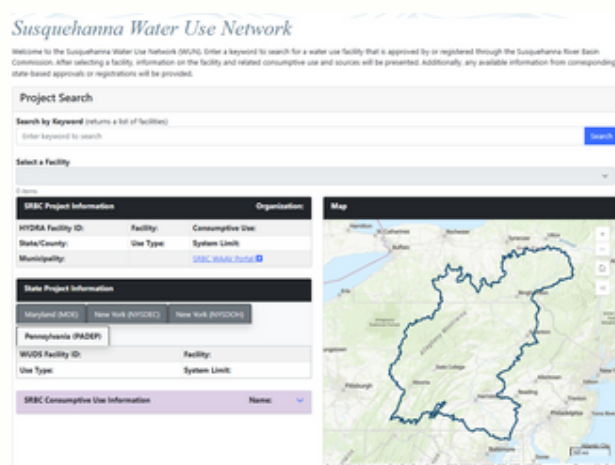


## HYDRA Upgrade



Staff assessed and streamlined information that is input into SRBC's internal database (HYDRA).

## Water Use Network



To enhance data sharing, staff developed the Susquehanna Water Use Network, a website for member state agency staff that presents water use permit information on one page in a dashboard format.

## Single Sign-on



Staff is developing a Universal Login Page which allows Project Sponsors a single sign-on option for SRBC sites (e.g., Water Application & Approval Viewer, online applications, Monitoring Data Website).

## New General Permit



A new General Permit (GP-03) eases the regulatory pathway for cooperative fish nurseries that withdraw water for flow-through use in their operations.  
[CLICK HERE FOR MORE INFORMATION.](#)



*Photo Credit: Pennsylvania Fish and Boat Commission, Cooperative Fish Nursery*



# Finding Answers

How are established conservation practices working and how might acceptable management practices harm our waterways? SRBC scientists are teaming with other agencies to explore how land use practices impact water health and ecosystems.



**Agricultural Water Use Pilot Study**



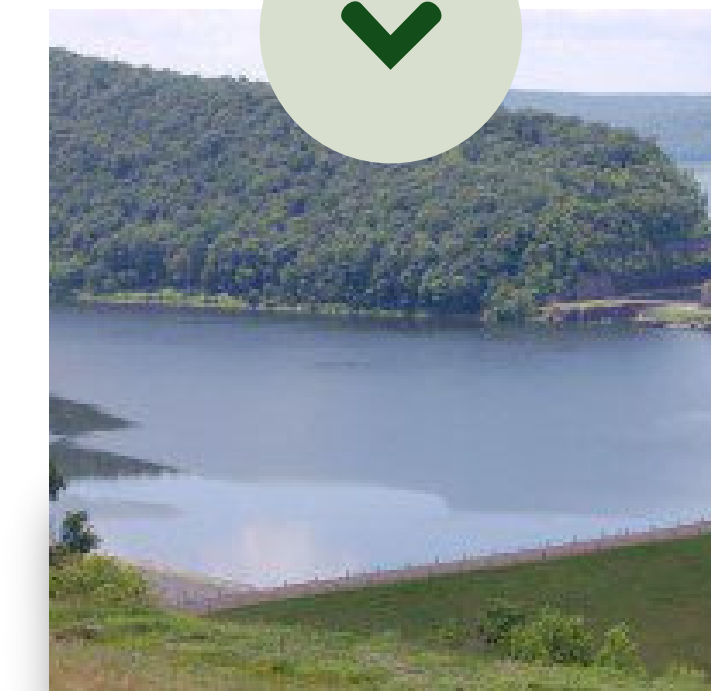
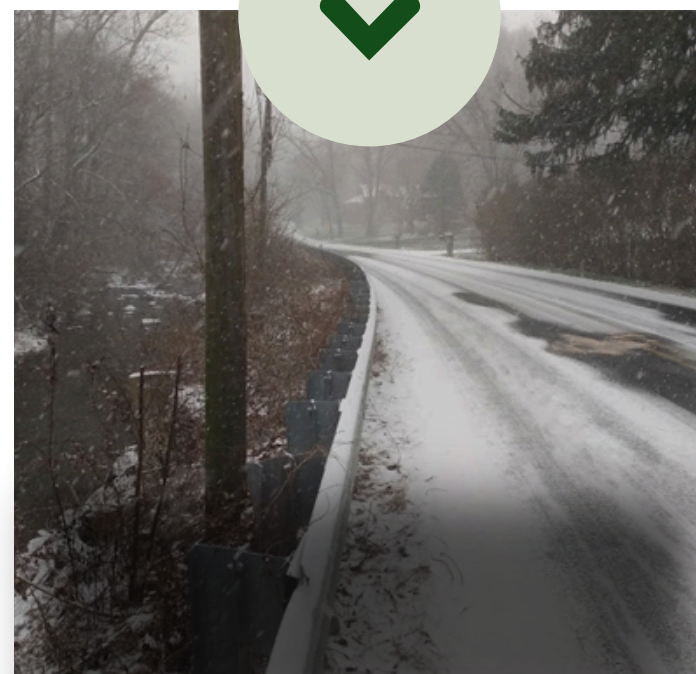
**Chesapeake Bay Agricultural Progress Study**



**Road Salt Study**



**Tioga Hammond Nutrient Study**







*This pilot study will enhance SRBC's understanding of agricultural water demands within the basin.*

## *Finding Answers*

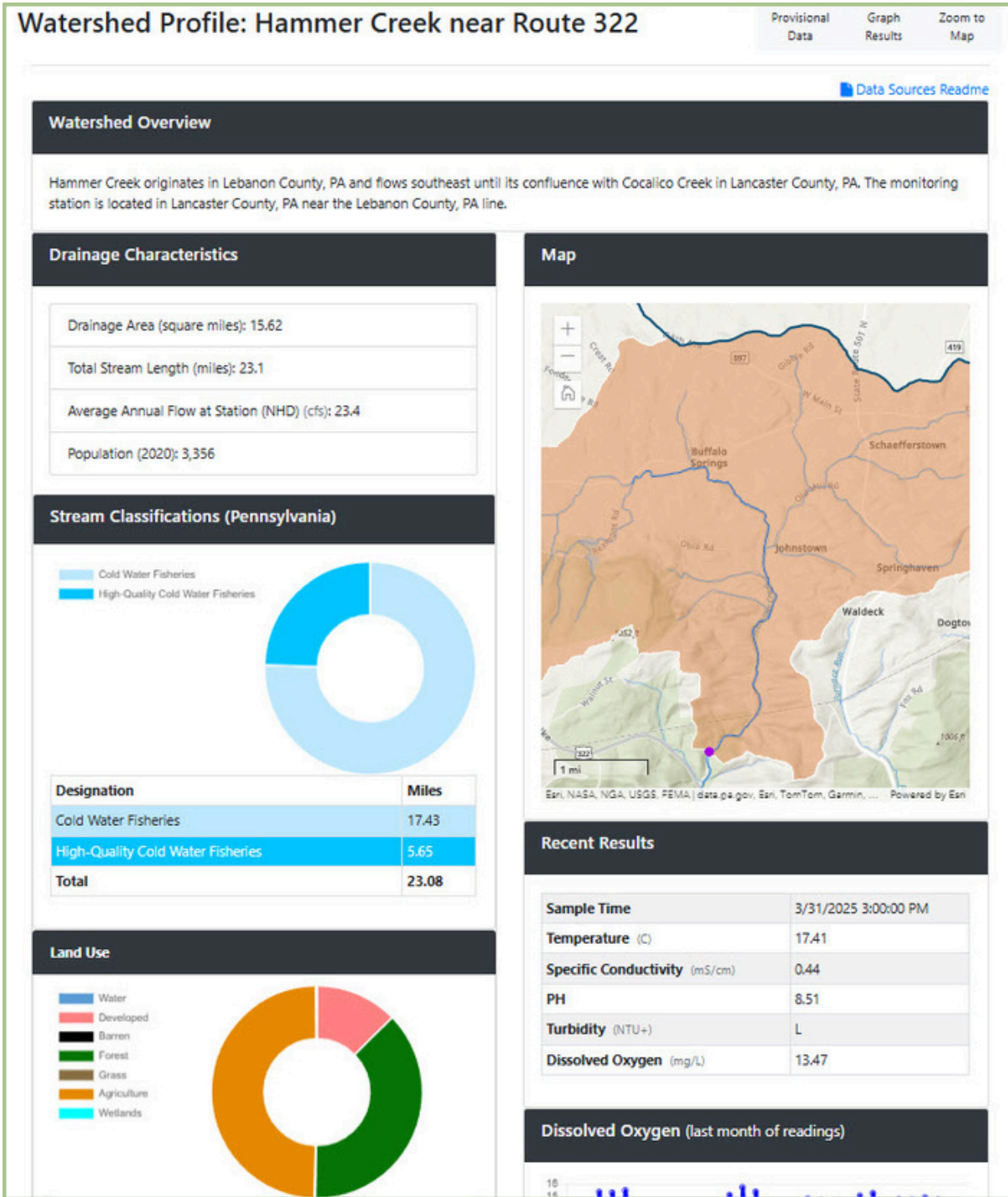
# Agricultural Water Use Pilot Study



In an effort to enhance SRBC's understanding of agricultural operations within the basin, our scientists have taken the lead on an integrated watershed management pilot study in the Mahantango/Wiconisco Creek Watersheds in Dauphin, Juniata and Snyder counties, Pa.

The goal of the pilot study is to get a better handle on water use within potentially stressed watersheds and to gain insight into water demands associated with potato growing. These efforts evolved into a broader initiative to catalogue water use by various agricultural sectors and plan next steps related to outreach and conversations with projects that may face water supply challenges during droughts.





## Finding Answers

# Small Agriculture Watershed Progress Study

SRBC collaborated with Chesapeake Bay Program (CBP) partners to add two new monitoring stations in small, agriculturally dominated watersheds that have high rates of conservation practice adoption. The study will focus on the impact of conservation practices on water quality and stream health. The stations are located along Hammer Creek and Little Conewago Creek in Lebanon County, Pa.

SRBC's roles in the Small Ag Watershed Progress Study include:

- water quality sample collection monthly and during select storm events consistent with the CBP's rigorous non-tidal network project;
- collection of benthic macroinvertebrate community samples;
- data management; and
- integration of the Commission's own continuous instream monitoring (CIM) station data situated in Hammer Creek, approximately two stream miles downstream of the CBP station.



SRBC Portal for Hammer Creek Real-Time CIM station







## *Finding Answers*

# Road Salt Impacts on Stream Quality

After years and years of increased salt entering surface waters from de-icing roads and sidewalks, scientists are beginning to notice long-term impacts. Initial results from Deer Creek (PA/MD border) and Cayuta Creek (PA/NY border), show poorer ecological conditions at sites with higher chloride concentrations. Moose Creek, which receives runoff from I-80 west of Clearfield, Pa., can experience peaks of over 200 mg/L – the current national threshold for aquatic life is currently 230 mg/L.

*Mean concentrations across all experimental sites range from 22-116 mg/L with a single sample maximum of 152 mg/L, while maximum yields (lbs/day/mi<sup>2</sup>) across all experimental sites range from 132-2,737.*



*In the Susquehanna River Basin, monthly sampling paired with continuous conductance monitoring at 12 sites allowed staff to evaluate typical and peak chloride concentrations, duration of peaks, and the volume of chloride delivered downstream.*



## Finding Answers

# Watching Lake Nutrients



*Pre-restoration data collection has begun with the deployment of two dissolved oxygen and temperature sensors. Goals of this sensor deployment include the determination of information related to lake stratification and how often the lake may turn over during the growing season. When a lake "turns over" and becomes fully mixed, it resuspends nutrients from the lake-bottom sediments, resulting in conditions ideal for algal bloom growth.*

A soon-to-be-constructed active treatment plant will eventually rid more than 20 miles of streams in the Tioga River Watershed of abandoned mine discharge. That will benefit the twin Tioga-Hammond Lakes.

SRBC is leading a study that will examine the potential impacts of nutrients within the Tioga Reservoir once the treatment plant is in operation. As pollution from the legacy mining is cleaned up, the bioavailability of the nutrients within the reservoir, previously trapped by metal pollution, has the potential to increase.

Partners include the U.S. Army Corps of Engineers and a graduate student from Mansfield University.





# By the Numbers



## Compliance 2024

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

In 2024, staff completed:

- 663 inspections
- 87 compliance actions
- 269 post approval conditions close-outs



## Eels in the Classroom



Launched in 2018, the **Eels in the Classroom (EIC) program** now reaches 50 classrooms and has expanded to Harford County Public Schools in Maryland. The EIC program provides juvenile American eels to educators to raise in their classrooms and then release back into the Susquehanna River.



## Grants 2024

2024 marked the second year of SRBC's **Stream & Watershed Enhancement Grant Program**. More than \$155,000 was awarded to 34 community-based projects that will benefit our waterways.

See awardees [HERE](#).



This was the third year for SRBC's **Consumptive Use Mitigation Grant Program**. More than \$8 million was awarded to 27 projects that reduce water use or increase water availability during critical low flow periods.



See awardees [HERE](#).



For the second year, SRBC served as financing authority for Maryland's innovative **Pay-for-Success Program**. This funding model pays for environmental outcomes only upon demonstration of successful implementation.

The State of Maryland is providing over \$20 million to purchase water quality outcomes to meet the nutrient reduction goals of the Conowingo Watershed Implementation Plan.

Read more [HERE](#).





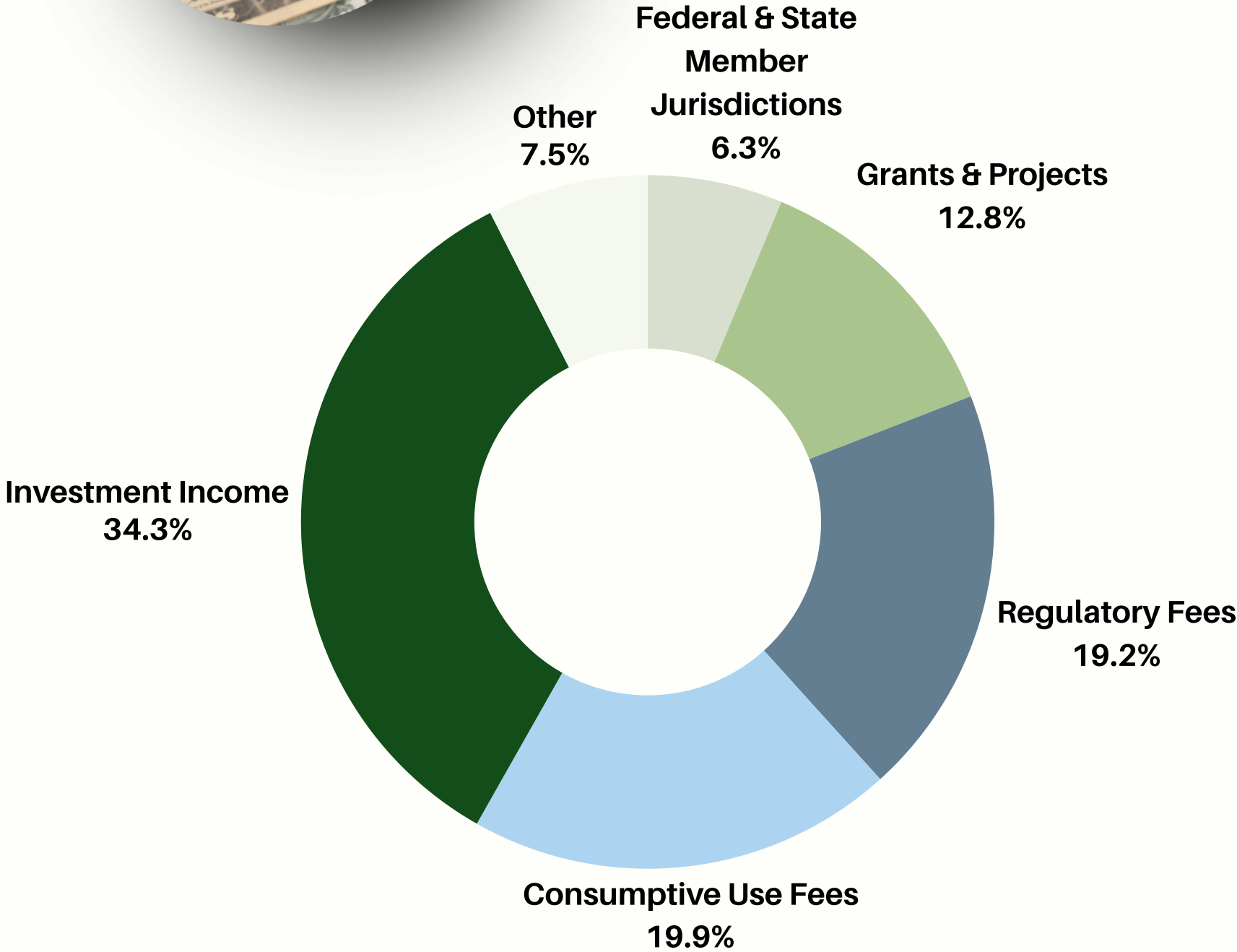


# Fiscal Year 2024

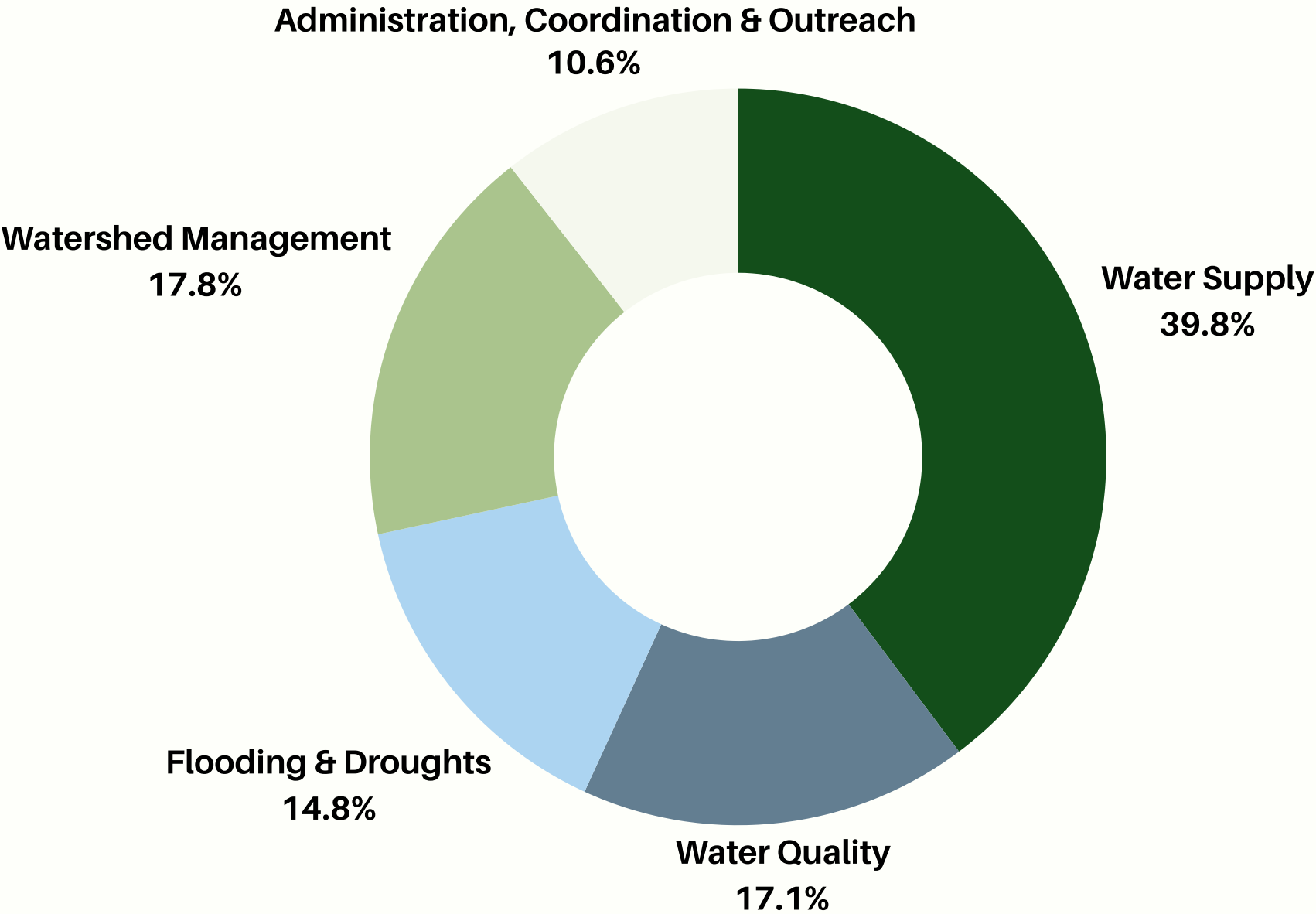
## Change in Commision Fund Balances

Fiscal Stabilization Fund	\$ (395,817)
Sustainable Water Resources Fund	\$ 68,014
Water Management Fund	\$ 3,143,509

←.....→  
**TOTAL** **\$ 2,815,706**



**TOTAL REVENUE: \$ 21,233,626**



**TOTAL EXPENDITURES: \$ 18,417,920**





# Annual Staff Excellence Award



**Brydon Lidle, Manager of IT**

*"the definition of a team player"*

*"respectful and extremely friendly"*

*"always inviting and helpful regardless of the task at hand"*





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