

SUSQUEHANNA RIVER BASIN COMMISSION

*Annual Report
2015*





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EXECUTIVE DIRECTOR'S *Message*

2015 marked the 45th year of the Commission's 100-year Compact. Interestingly, while the Commission has forged a collection of water resource management principles over that time—emphasizing the importance of flood and drought preparation, water quality trends analysis, and the mitigation of consumptive use of water, for example—the driving issues that framed the Compact are still relevant today.

Water quality impairments, particularly those affecting the Chesapeake Bay, are still at the forefront of many management efforts, with water demands associated with power generation, energy development, and safe drinking water remaining the top consumers of water in the Basin, and those with the most potential to cause adverse impacts to its natural resources.

As previewed in my 2014 Annual Report message, the Commission is in the midst of several important data collection and analysis efforts which are beginning to bear fruit. The pages of this year's report highlight several of the studies and management initiatives that build on the data and strive to address the long standing and critical

issues facing the Basin's water resources. As is always our intent, the projects represent the union of science and water resource management, conducted to gain a thorough understanding of water resource issues in the Basin in order to build a solid foundation for future management initiatives.

The Commission is leading the water resources management issues facing the Basin today by having the capability to collect and analyze the data needed to perpetuate effective management of our shared resources. While it remains to be seen what the drivers will be during the second half of the Commission's 100-year Compact, we intend to be ready to meet those opportunities and challenges.

2015 COMMISSIONERS



UNITED STATES

Brig. General William H. Graham
 Commander
 North Atlantic Division
 U.S. Army Corps of Engineers

1st Alternate: Col. Edward P. Chamberlayne
2nd Alternate: David J. Leach
3rd Alternate: Amy M. Guise



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Ben Grumbles
 Vice Chair, Secretary
 Maryland Department
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1st Alternate: Saeid Kasarai
2nd Alternate: Virginia Kearney



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James M. Tierney
 Assistant Commissioner
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1st Alternate: Kenneth P. Lynch
2nd Alternate: Peter Freehafer



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 Chair, Secretary
 Pennsylvania Department of
 Environmental Protection

1st Alternate: Kelly J. Heffner
2nd Alternate: Andrew C. Zemba

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Deputy Executive Director

Marcia E. Hutchinson, MBA
Director, Administration and Finance

GENERAL COUNSEL

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Project Review

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Gwyn W. Rowland
Governmental and Public Affairs

Eric R. Roof
Compliance and Enforcement

James P. Shallenberger
Monitoring and Protection

SECRETARY TO THE COMMISSION

Stephanie L. Richardson

SOURCE WATER PROTECTION PARTNERSHIP CONTINUES *to* PROMOTE COLLABORATION

Now in its third year, the Lower Susquehanna Source Water Protection Partnership furthered its commitment to fostering a regional meeting-of-the-minds to share experiences and improve efforts at protecting sources of drinking water.

Government and non-government agencies, water suppliers, planners and other interested parties convened twice during 2015 to share success stories and discuss effective protection strategies. Panel discussions covered two current issues:

- Regional monitoring activities—how to best compile and share data and enhance existing monitoring and early warning systems; and
- Planning for drought situations, including the development of new tools for forecasting and decision-making.

The Steering Committee developed a survey of participants to begin planning for the future structure and focus of the group. The survey found that data and information sharing top the list of services that the Partnership should provide, followed by communication and funding assistance. Issues of concern included management of stormwater and development, the need for stronger collaboration, and improved monitoring.

Lower Susquehanna Focus Area

- 4,360 square mile area
- 16% of the Basin
- Most developed region of the Basin
- 44% of the Basin population
- 3.9 million people rely on the area for drinking water

Some of the efforts the partnership has focused on are:

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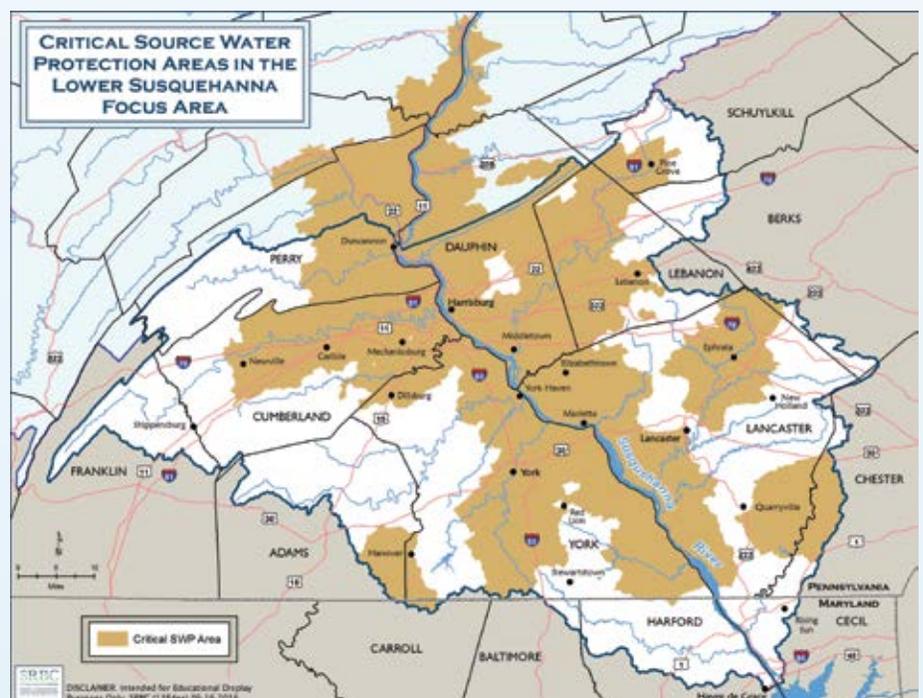
Improving spill response across agencies, water suppliers, and emergency responders
- 

Promoting innovative solutions to stormwater issues
- 

Connecting BMP efforts to source water protection
- 

Enhancing water quality monitoring efforts
- 

Assessing contamination risks throughout the lower Susquehanna region



Restoring BEAR RUN

In late 2014, the Commission and the Indiana County Conservation District completed the final link in the Bear Run Renaissance Project, a plan to restore an entire stream from severe abandoned mine drainage (AMD) impairment. A Renaissance Grant Award from the Pennsylvania Department of Environmental Protection (PADEP) funded the construction of seven AMD reduction projects, mainly through direct AMD treatment, but also through mine refuse removal and abandoned mine land (AML) reclamation. Combined with the two previously completed AMD/AML reduction projects, Bear Run receives at least 75 percent less acid mine drainage than before the projects were installed.

Following the reduction of acidity in the stream, the aquatic ecosystem rapidly rebounded. In 2016, PADEP will remove approximately six miles of Bear Run from the Commonwealth's list

of impaired waters, and the Pennsylvania Fish and Boat Commission will add 13.5 miles to the Wild Trout Waters list and 5.5 of those miles to the Class A Wild Trout Waters list.

quality and biological improvements in the watershed.

ADDITIONAL SUCCESSES

With the Bear Run project coming to a close, the Commission has turned its restoration attention to other watersheds impacted by legacy coal mine pollution.

- Sandy Run, a tributary to Drury Run near Renovo, Pennsylvania, will have a treatment system constructed in 2016 to remedy the only source of pollution in the entire watershed. Once treated, five stream miles could



All remediation projects are complete, but as an innovative final stage, P&N Coal Co. is considering re-mining an area to remedy diffuse discharges from a shallow coal seam that represents the last substantial loading source in the watershed. The Commission plans to continue monitoring Bear Run to document the continued water

ABOVE: Staff examining the vegetative growth on the Banks #2 mine spoil reclamation project site. Mine spoil was re-contoured, capped with clay and topsoil, seeded and mulched. **RIGHT:** Tom Clark, Mine Drainage Program Coordinator, in front of a 30-ton hydrated lime silo used to treat mine drainage exiting the Banks #2 deep mine. **FAR RIGHT:** Discharge water to the left, discharge water inoculated with hydrated lime to the right, mix downstream to create a water with a high enough pH to oxidize and precipitate dissolved metals in the mine drainage water.





South Branch Bear Run before restoration (right) and after restoration (above).

be removed from the list of impaired waters. In addition, Sandy Run has tremendous potential as a future Class A Trout stream.

- Birch Island Run, a tributary to the West Branch of the Susquehanna River, also in western Clinton County, will have two AMD treatment systems designed and constructed. Once treated, almost four stream miles could be removed from list of impaired waters. In addition, and just like Sandy Run, Birch Island Run

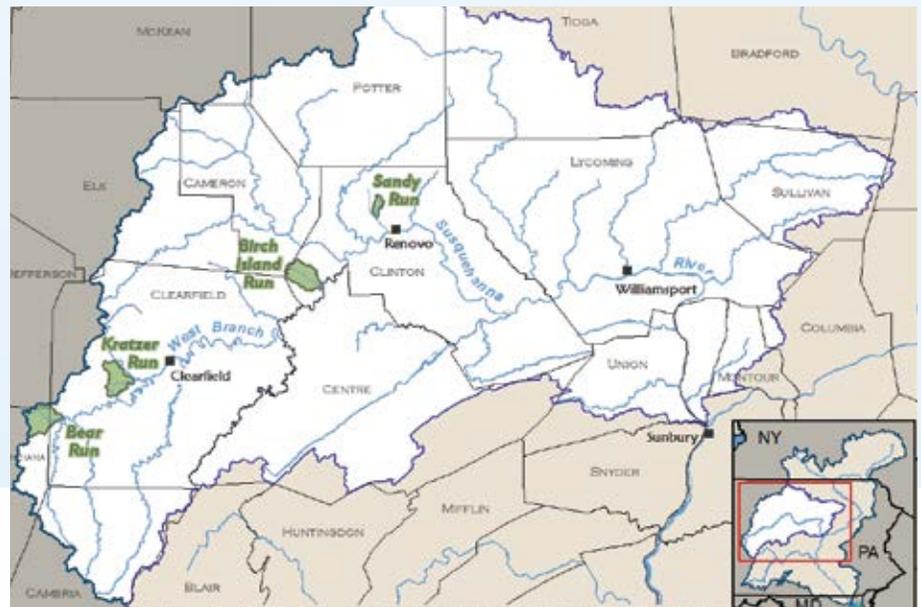
has tremendous potential as a future Class A-brook trout stream.

- The Commission hopes to lead a project on Rausch Creek, a tributary in the Mahantango Creek watershed in Schuylkill County, to more effectively operate PADEP’s Rausch Creek AMD Treatment Plant. This project could possibly utilize the large underground mine pools as water storage mechanisms to supplement low stream flows during drought conditions.

Finally, the Commission is collaborating with Trout Unlimited (TU) to restore Kratzer Run from legacy coal mine pollution. The aquatic ecosystem in Kratzer Run is beginning to come back to life due to past AML reclamation projects and through the natural attenuation of AMD water. However, sections of Kratzer Run are still impaired. The Commission and TU believe that only a few AML/AMD projects may be needed to restore Kratzer Run, therefore possibly removing nearly 20 stream miles from PA’s Integrated List of Impaired Waters.

“The Commission is helping us leverage additional funding in Anderson Creek in order to complete this important work. Through this strong partnership, we feel confident that we will now be able to complete the necessary projects to finally remove Kratzer Run from the impaired waters list.”

— Rachel Kester,
Eastern Abandoned Mine Program
Project Coordinator, Trout Unlimited



ASSISTING SMALL MUNICIPALITIES *in* MEETING *Their* REGULATORY RESPONSIBILITIES



Recognizing the challenges facing smaller municipal water supply systems to keep abreast of current regulatory requirements, the Commission has been assisting smaller municipal water systems to meet these requirements through the *Public Water Supply Assistance Program*. Eligible public water suppliers receive assistance on how to renew expiring groundwater withdrawal approvals or to add new groundwater sources to their systems. In addition, the Commission is also providing outreach and education on regulatory requirements and training on aquifer testing plan preparation by attending and convening workshops on these issues.

The Commission assists participating municipalities in the areas of data collection methods, procedures related to the aquifer testing process, planning for renewal of expiring approvals, or adding new water supply sources.

The Commission's assistance may include:

- reviewing existing data, identifying data gaps, recommending data collection methods and developing a schedule for obtaining the missing data prior to submitting renewal applications;
- explaining the Commission's provisions for "grandfathered" sources (those uses that pre-date Commission regulations);
- reviewing projected growth and water demands to determine if current sources can meet those demands and evaluating the need for or impacts of adding new water sources to the system;

- identify other issues, such as unaccounted for water loss and the need for metering and monitoring that may arise while developing an action plan, and recommending ways to address or mitigate those issues; and

- completing a pre-drill well site review for the addition of new sources.

In 2015, Commission staff worked with municipalities in Lancaster and Tioga Counties, Pennsylvania, with citing and developing new drinking water sources by completing pre-drill well site reviews. In these reviews, staff identified potential issues that could limit the quantity and consistency of the water needed for the community's drinking water.

The program has been made possible through a partnership with the Pennsylvania Department of Environmental Protection.

EMERGENCY RESPONSE TOOL *Aids* LOCAL MUNICIPALITY'S DRINKING WATER

In the early morning hours of June 8, 2015, a fertilizer plant in Adams County, Pennsylvania, erupted into flames. As a result of the firefighting activities, chemically-laced water entered a small tributary to Conewago Creek, a drinking water source for several communities.

During such events, Pennsylvania Department of Environmental Protection (PADEP) emergency response teams notify affected public water supply systems. To assist in understanding how long a spill might take to reach a water supply intake location, the Commission assists in the effort by utilizing a computer model that calculates the travel time of pollutants. This tool also generates information on the toxicity of the chemicals involved and their potential impact to human

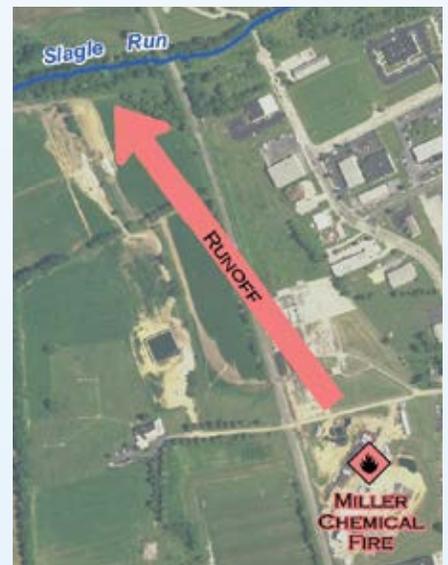
With the Miller Chemical and Fertilizer fire, the polluted water could affect nearby water supplies. PADEP recommended that East Berlin, one such water supplier, temporarily suspend the use of two wells used for drinking water. However, the Authority's other water sources were insufficient to meet system demands, so the Commission issued an emergency permit to allow East Berlin to increase operations to temporarily add additional water to their system.



The Susquehanna River Basin provides drinking water to over 6 million people with more than 20 drinking water intakes on the main stems of the River.

health and the environment. The model uses complex mathematical equations and real-time streamflow information from the U.S. Geologic Survey streamgage network to determine estimated travel times and the projected pathway for the spill.

PADEP used the time of travel generated by the model to help track the leading edge of the pollution plume. Over the next several days, Commission staff continued to run the model as stream levels fluctuated due to seasonal thunderstorms. By the middle of June, the pollution plume had passed and East Berlin's operation returned to normal. Thanks to the cooperation among PADEP, the Commission, and local municipalities, the supply of safe drinking water was maintained.

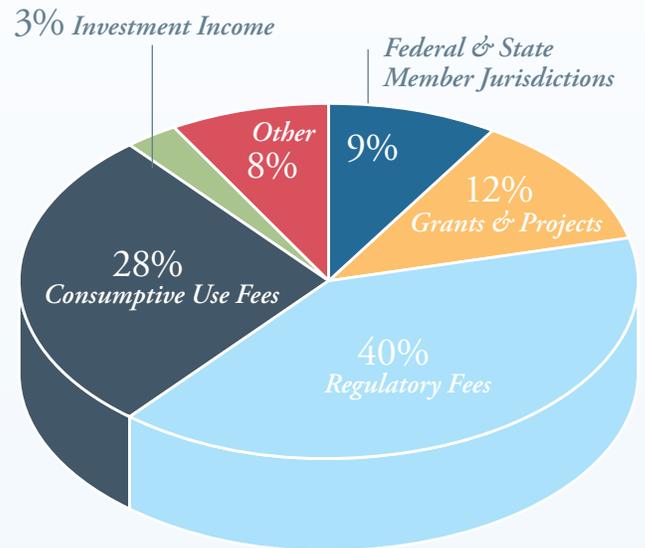


SUSQUEHANNA RIVER BASIN COMMISSION FISCAL YEAR 2015 FINANCIAL SUMMARY

Fiscal Year 2015 Total

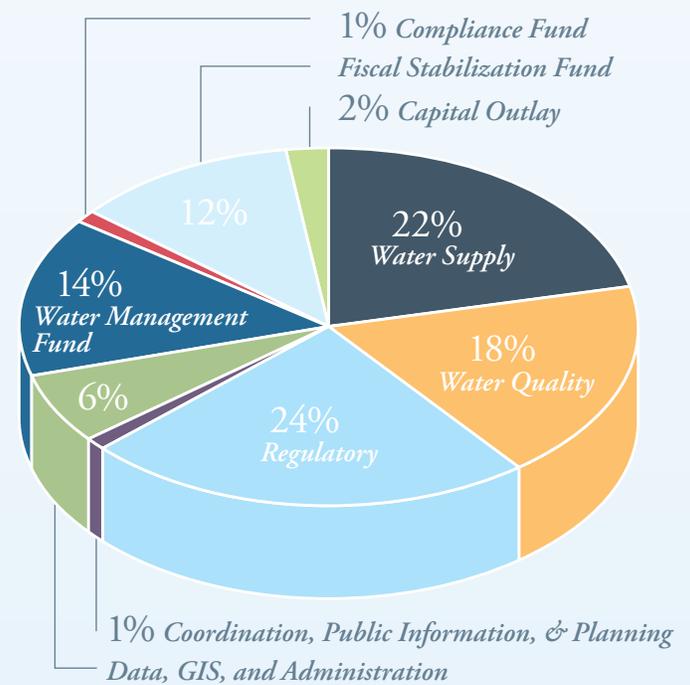
REVENUE

Federal and State Member Jurisdictions	\$ 1,192,000
Grants and Projects	\$ 1,621,705
Regulatory Fees	\$ 5,316,119
Consumptive Use Fees	\$ 3,697,631
Investment Income	\$ 374,393
Other	\$ 1,082,214
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TOTAL	\$ 13,284,062



EXPENDITURES

Water Supply	\$ 2,857,918
Water Quality	\$ 2,389,839
Regulatory	\$ 3,161,212
Coordination, Public Information, and Planning	\$ 128,286
Data, GIS, and Administration	\$ 854,245
Water Management Fund	\$ 1,899,962
Compliance Fund	\$ 165,498
Fiscal Stabilization Fund	\$ 1,541,032
Capital Outlay	\$ 286,070
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TOTAL	\$ 13,284,062



2015 ANNUAL EXCELLENCE AWARD



Matt Shank
Aquatic Biologist, with a muskellunge
(*Esox masquinongy*).

Matt's highly regarded field endeavors, such as leading efforts surrounding the Commission's Aquatic Resource Surveys, headwaters water withdrawal research, and the introduction of the invasive Didymo (*Didymosphenia geminata*) algae, makes him an excellent choice for this annual award. Matt is not only an outstanding member of the Commission's team, but also a bridge between program areas that is essential to the collaborative methods by which the agency strives to succeed in its goals.

2015 QUARTERLY SPOTLIGHT AWARD

FIRST QUARTER

Rachelle Eby
Compliance Specialist

SECOND QUARTER

Andrew Leakey
Aquatic Biologist

THIRD QUARTER

Erin Lynam
Aquatic Biologist

FOURTH QUARTER

Jason Oyler
General Counsel



SRBC

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