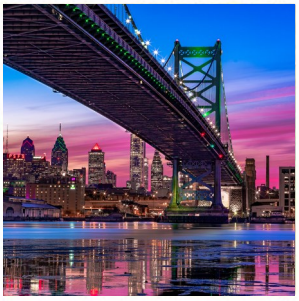
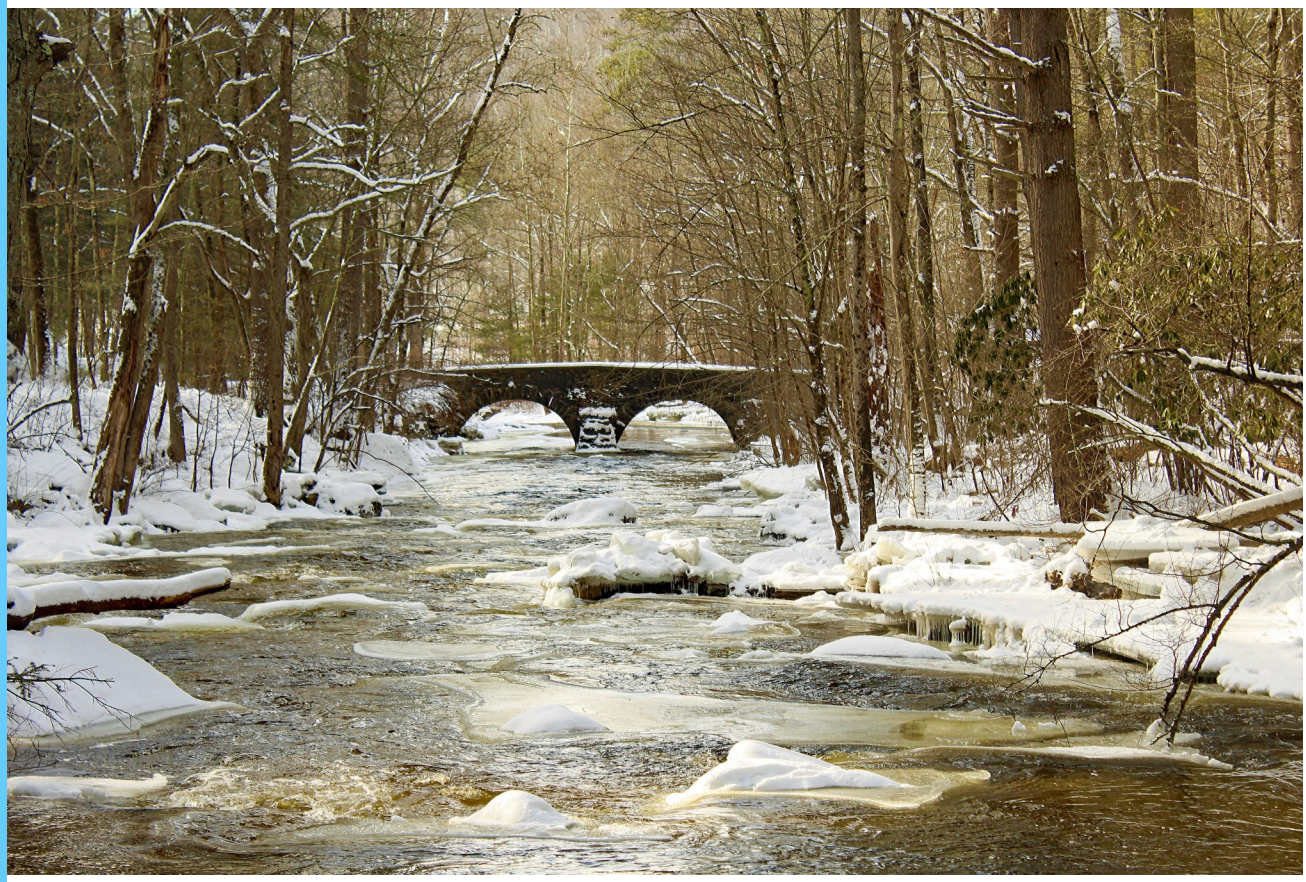
ANNUAL REPORT 2018



Delaware River Basin Commission

DELAWARE • NEW JERSEY
PENNSYLVANIA • NEW YORK
UNITED STATES OF AMERICA



Winter at the Stone Arch Bridge by Martha Tully at Ten Mile River, Narrowsburg, NY.

Winner of DRBC's Winter Photo Contest and the annual winner of the four season winners.

See page 28 for the other seasonal winners.

"The commission shall make and publish an annual report to the legislative bodies of the signatory parties and to the public reporting on its programs, operations and finances."

Article 14, Section 12.12 of the Delaware River Compact

TABLE OF CONTENTS

Delaware River Basin Commission

DELAWARE • NEW JERSEY
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25 Cosey Rd., West Trenton, NJ 08628
609-477-7000

EXECUTIVE DIRECTOR'S MESSAGE

IMAGINE A DAY WITHOUT WATER

It seems as if every block on the calendar is set aside for the celebration of another special recognition "day." Many recognition days are for extremely worthy causes that deserve our collective support. However, it is difficult to keep up with all of them. As you can guess, the one special day that captures my focus occurs every fall when we are asked to **Imagine a Day Without Water**.

In the United States we generally have universal access to safe and adequate water supplies. However, the Centers for Disease Control and Prevention estimates that about 11 percent of the world's population does not have access to an improved water supply, and about 25 percent of the global population does not have access to adequate sanitation systems. Our relationship with universal access to water can lead us to the assumptions that waters will always flow and drinking waters are always safe. Even in the US, we know of too many recent examples - some making national headlines - that highlight challenges and vulnerabilities to our water resources.

As evidenced by our 2018 Annual Report, we at the Delaware River Basin Commission (DRBC) think about safe, reliable and sustainable water resources EVERY day. We know that without thoughtful and science-based planning, policy and regulation we face increased risks that would impact the shared interstate water supply for more than 13 million people (about 4 percent of the US population.)

We plan for droughts. We regulate water that is used consumptively and leaves the Basin's water cycle. We allocate waters throughout the basin equitably. We manage flows and reservoir releases to control the movement of salt water in the Delaware River Estuary, thus protecting drinking water intakes in NJ and Pa. We manage and allocate areas of groundwater use the require special protection. We plan for flow impacts due to climate change and sea level rise to ensure future water availability for our children's and grandchildren's generations. We monitor, assess and set standards for the quality of interstate waters, and we re-examine

those standards as needed to determine if they meet current objectives. We lead the way in the development and implement plans for water quality improvements including the industrialized sections of the estuary.

When we find threats to our shared water resources such as we did with PCBs, we lead the way to clean up these legacy pollutants. As new contaminants are discovered, such as microplastics, per– and polyfluoroalkyl substances (PFAS) and other contaminants of emerging concern, we monitor and assess the impacts to our shared interstate waters. We keep clean waters clean in areas of exceptional water quality through modeling and rigid regulatory programs.

As Benjamin Franklin once said: "When the well runs dry, we all know the value of water." If the "well runs dry," that is NOT a "special day." Please examine this annual report and you will witness the dedicated staff and Commissioners at DRBC working, along with so many others, on our 57 plus year water resource management mission so that we do not need to **Imagine a Day Without Water**.

Steve Tambini, PE

Executive Director

SIGNATORY MEMBERS

COMMISSIONERS

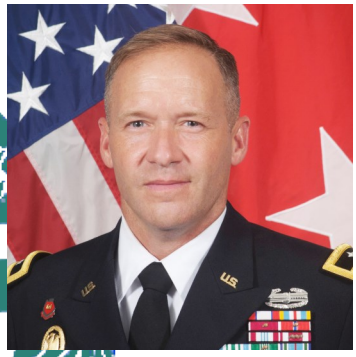
New Jersey

Governor Philip D. Murphy
Chair, July 1 to Dec. 31
Vice Chair, Jan. 1 to June 30

New York

Governor Andrew Cuomo, Vice Chair
July 1 to Dec. 31

Federal Government

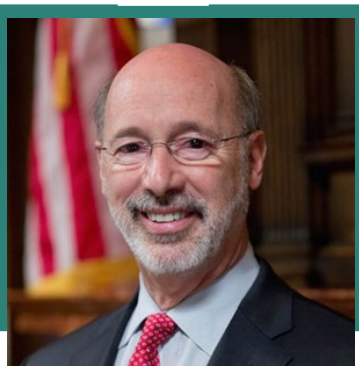


Major General Jeffrey L. Milhorn

Delaware

Governor John Carney

Pennsylvania



Governor Tom Wolf
Chair, Jan. 1 to June 30

The ex officio members of the Delaware River Basin Commission include the four Basin state governors and the commander of the U.S. Army Corps of Engineers, North Atlantic Division, who serves as the federal representative.

Each Commissioner has one vote of equal power with a majority vote needed to decide most issues. The Delaware River Basin Compact requires the annual election of a chair and vice chairs, which historically has been based upon rotation of the DRBC's five members.

ALTERNATES/ADVISORS 2018

From left: Executive Director Steve Tambini, Lieutenant Colonel Kristen N. Dahle (Federal), Jeffrey L. Hoffman (N.J.), Kenneth Kosinski (N.Y.), Bryan Ashby (Del.), and Aneca Y. Atkinson (Pa.)

FEDERAL GOVERNMENT

1st Alternate	Lieutenant Colonel Kristen N. Dahle, Commander, USACE Philadelphia District
2nd Alternate	Pending Alternate
3rd Alternate	Henry Gruber, USACE North Atlantic Division Deputy Chief of Planning & Policy Division

PENNSYLVANIA

1st Alternate	Patrick McDonnell, DEP Secretary
2nd Alternate	Aneca Y. Atkinson, Acting Deputy Secretary, Office of Water Programs
3rd Alternate	Jennifer Orr-Greene, Director, DEP Compacts and Commissions Office

NEW JERSEY

1st Alternate	Catherine R. McCabe, DEP Commissioner
2nd Alternate	Michele Putnam, Assistant Commissioner, Water Resource Management
3rd Alternate	Jeffrey L. Hoffman, State Geologist

NEW YORK

1st Alternate	Basil Seggos, DEC Commissioner
2nd Alternate	Mark Klotz, Director, DEC Division of Water
3rd Alternate	Vacant
4th Alternate	Kenneth Kosinski, Chief, DEC Watershed Implementation Section
Advisor	Vincent Sapienza, New York City DEP Commissioner

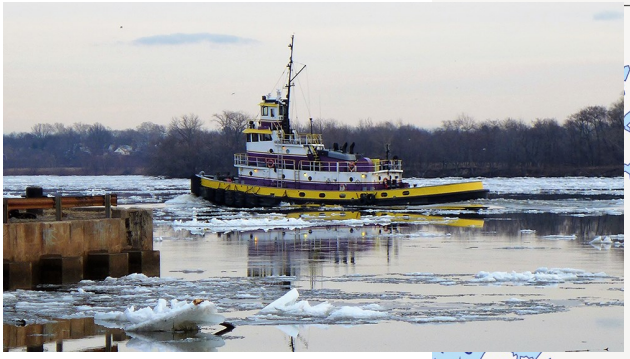
DELAWARE

1st Alternate	Shawn M. Garvin , DNREC Secretary
2nd Alternate	Pending Alternate
3rd Alternative	Virgil R. Holmes, Director, DNREC Division of Water: Management Section
4th Alternative	Bryan A. Ashby, Manager, DNREC Division of Water Resources, Surface Water Section

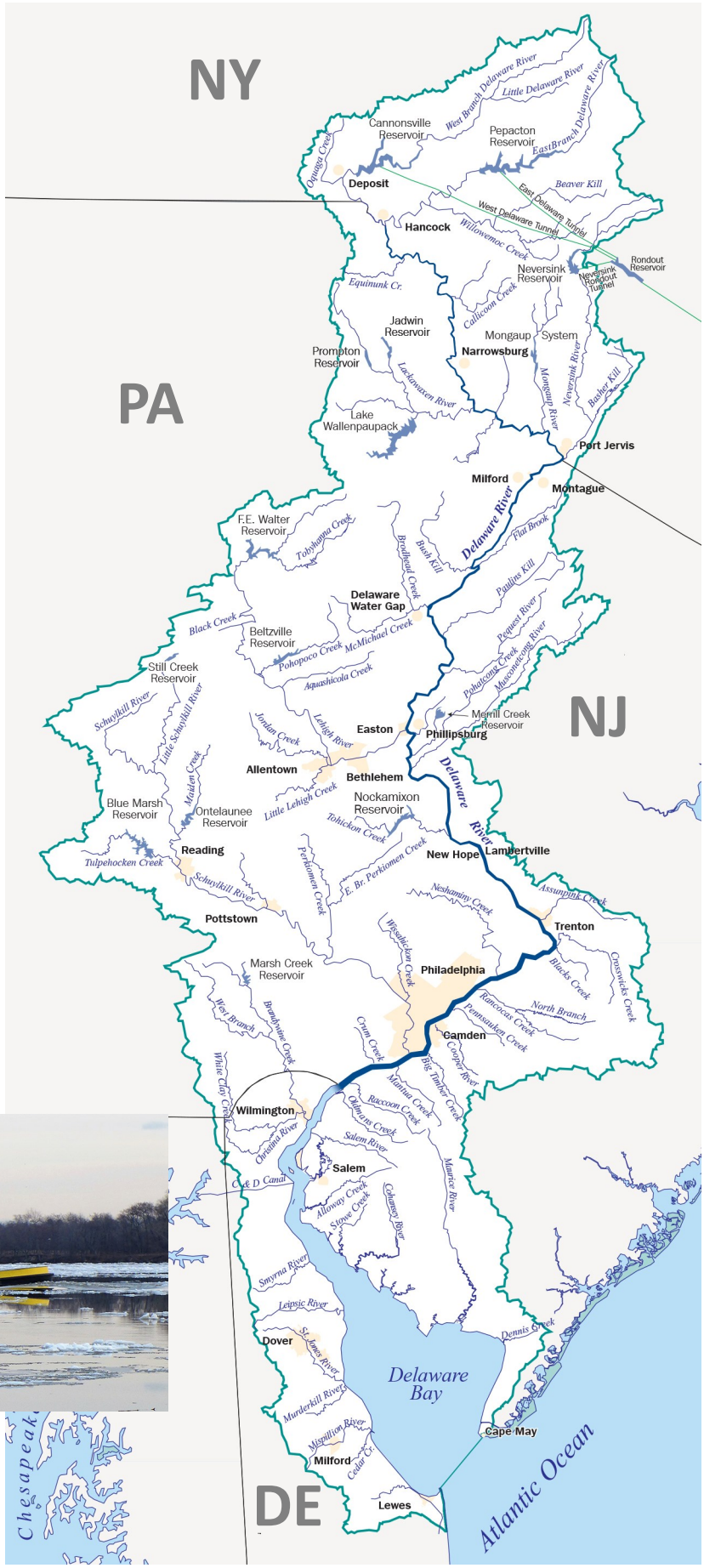
THE BASIN

Lying in the densely populated corridor of the northeastern U.S., the 13,539 square mile Delaware River Basin stretches approximately 330 miles from the river's headwaters in New York State to its confluence with the Atlantic Ocean. The Basin includes approximately 12,800 square miles of land area, nearly 800 square miles of the Delaware Bay and more than 2,000 tributaries, including many that are rivers in their own right. The northernmost tributaries to the Delaware River originate in the forested western slopes of the Catskill Mountains, which reach elevations of up to 4,000 feet. The East and West Branches meet at Hancock, N.Y., where the Delaware River descends about 800 feet on its journey to the Atlantic Ocean.

The Delaware River is the longest un-dammed river in the U.S. east of the Mississippi River. If one stands on one side of the river, there is a different state on the other side. It is an interstate river its entire length.



Tug on Cold Waters by Stephen Perzan at Pier E, Philadelphia, Pa.



WATERSHED OR BASIN?

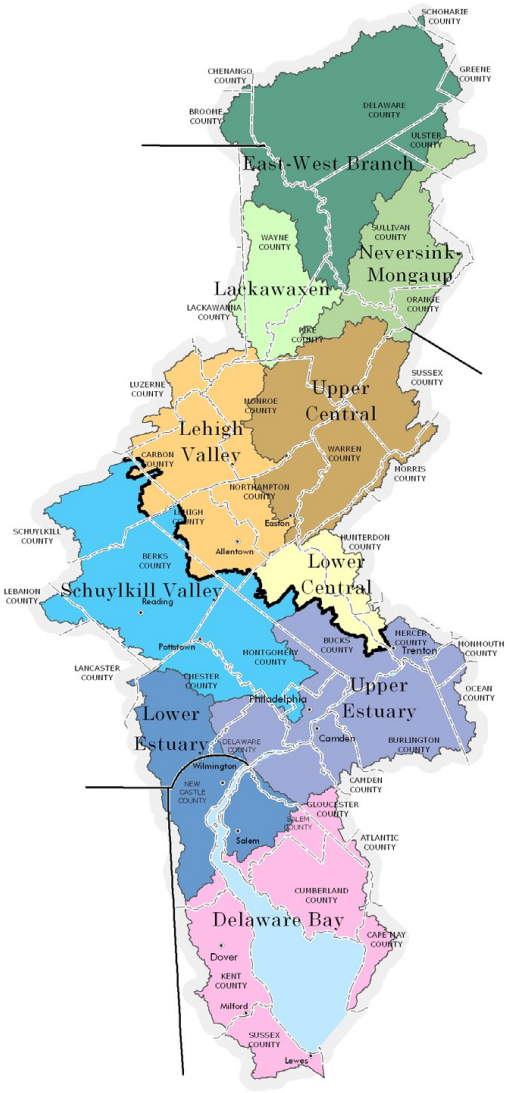
A watershed can be simply described as the area of land draining to a particular stream.

A basin is that land from which all the water flowing through watersheds end up in a particular river, and ultimately into a larger body of water such as the Atlantic Ocean.

As the Delaware River Basin is equal to the sum of its parts, regions and sub-regions are defined by watershed boundaries rather than state or political boundaries. There are ten sub-regions (as seen in the map at right). These are created by grouping watersheds together based on the segment of the Delaware River to which they drain.

POLITICAL VS. GEOGRAPHIC BOUNDARIES

The Delaware River Basin's drainage area encompasses extensive landscapes in New York, New Jersey, Pennsylvania and Delaware (and eight square miles in Maryland, which is not a member of the DRBC). All or part of 42 counties and 838 municipalities within the four Basin states contribute to and benefit from the resources of the Delaware River Basin. Water resources are also exported to cities in N.J. and N.Y. outside of the Basin boundary. While the states retain autonomy, the Delaware River Basin is unique in governance. It is the only river basin with both an interstate-federal Commission and a national estuary program in place. The 1961 Compact establishing the DRBC was the first federal-interstate agreement for basin-scale water resources management. The DRBC predates the first Earth Day (April 22, 1970), the establishment of the Environmental Protection Agency (Dec. 2, 1970) and the passage of the federal Clean Water Act (1972). The national significance of the Delaware Estuary was acknowledged in 1988 when it became part of the National Estuary Program.



The ten sub-regions of the Delaware River Basin.

HYDROLOGIC CONDITIONS

A RECORD YEAR

2018 was a year for the record books; several precipitation records are highlighted below:

- **Reading, PA** experienced its wettest calendar year since record-keeping began in 1894. Precipitation totaled 68.08 inches, which is 24.81 inches above normal. The previous record was 61.21 inches set back in 1996.

- **Wilmington, DE** experienced its wettest calendar year since record-keeping began in 1894. Precipitation totaled 61.37 inches, which is 18.29 inches above normal. The previous record was 61.05 inches set back in 1945.

- **Philadelphia, PA** experienced its 2nd wettest calendar year since records began in 1872. Precipitation totaled 61.52 inches, which is 19.99 inches above normal. The wettest year on record was 2011 when the city received 64.33 inches. It is important to note 2011 included two major precipitation events—Hurricane Irene and Tropical Storm Lee. Philadelphia received 19.31 inches of rain from Hurricane Irene alone.

The Schuylkill River at Philadelphia, PA recorded the highest annual median flow since record-keeping began in 1932.

- **Montague, NJ** recorded the highest annual median flow since record-keeping began in 1940.

- **Trenton, NJ** recorded the second highest median flow since record-keeping began in 1913. Only 2011 had a higher median, which included high flow rates from Hurricane Irene and Tropical Storm Lee.

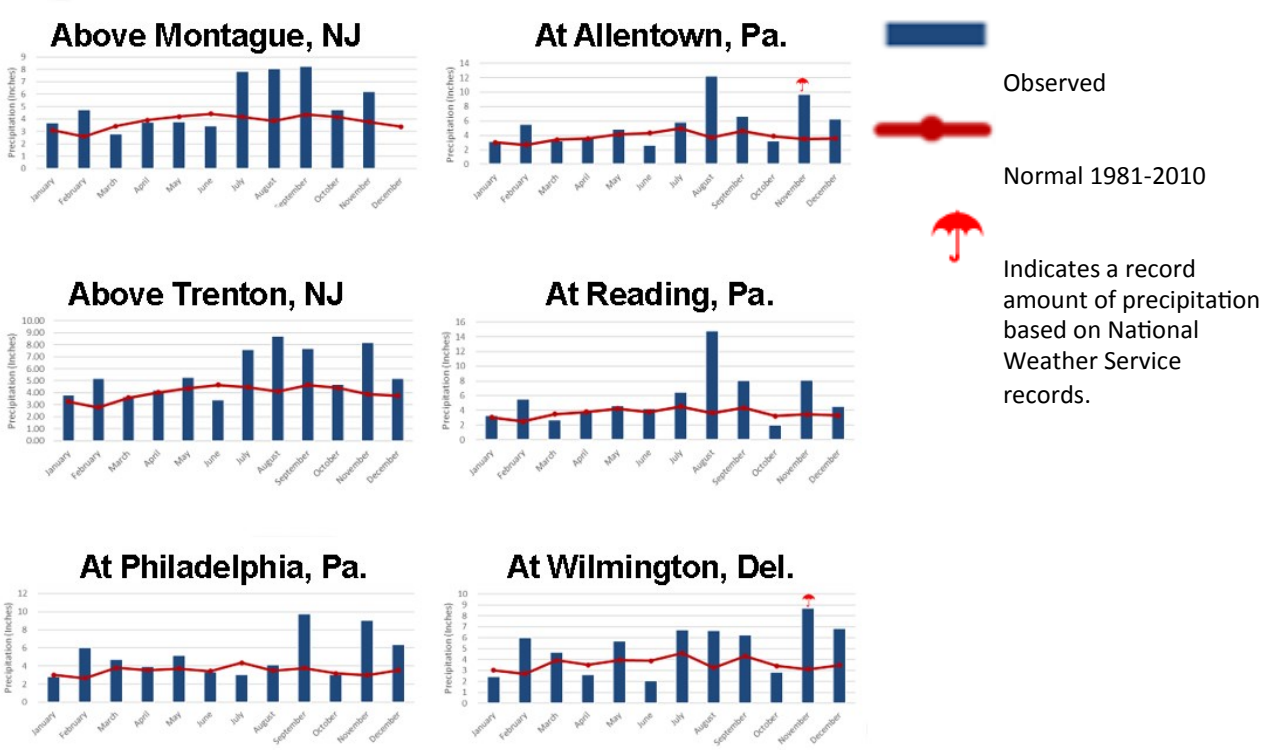
Autumn at the Falls by Kevin Haines at Buttermilk Falls, N.J.

PRECIPITATION

2018 precipitation totals by county ranged from 57.3 inches in Chenango Co., N.Y. to 78.1 inches in Lebanon Co., Pa. All counties experienced above-normal precipitation, and more than half of the counties recorded annual totals of 20” or more above normal.

The precipitation amounts at Montague, Trenton and Wilmington are used to represent the regional precipitation throughout the Basin. The average observed precipitation above Montague, N.J. for 2018 was an estimated 60.85 inches, or 15.56 inches above normal. Similarly, observed precipitation above Trenton, N.J. was 67.7 inches, or 19.7 inches above normal. Annual precipitation at Wilmington, Del. was a record-setting 61.37 inches, or 18.3 inches above normal.

2018 Precipitation at Selected Stations in the Delaware River Basin



GROUND WATER

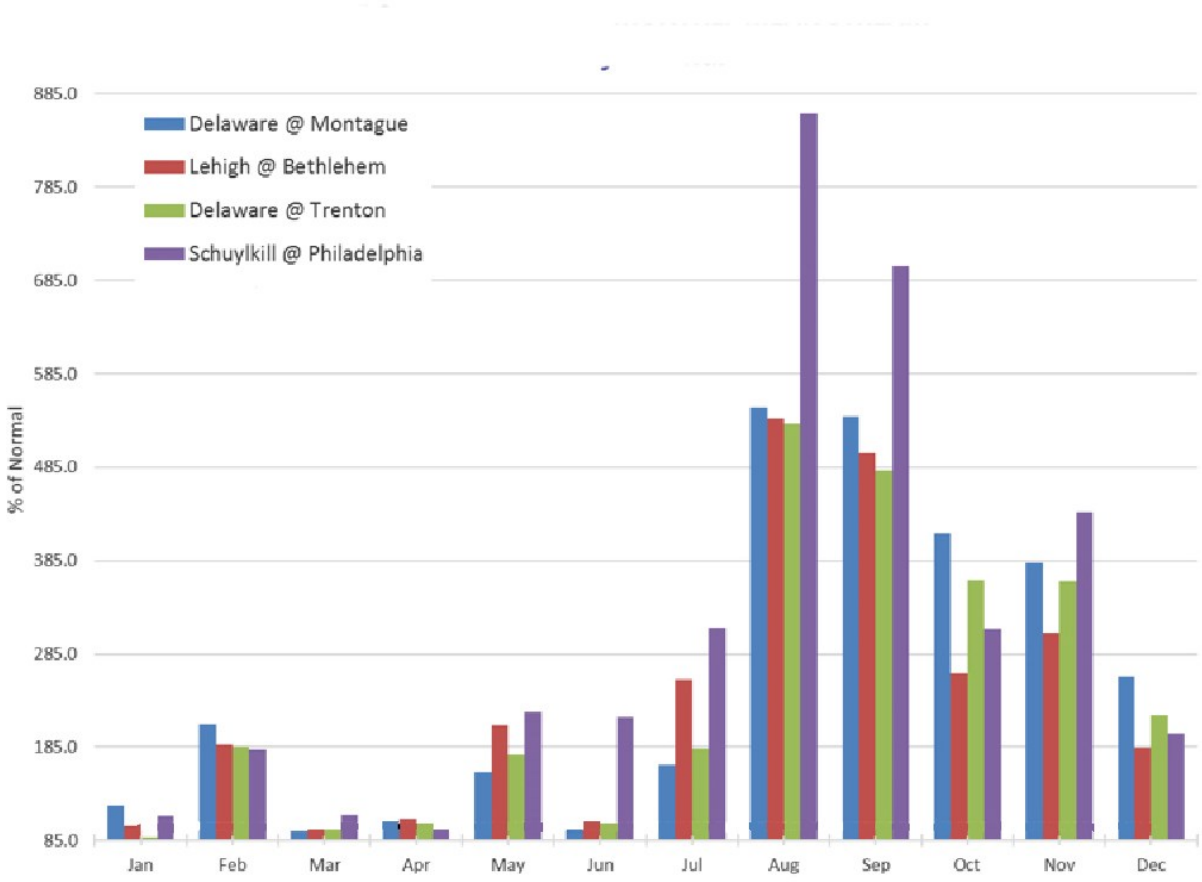
Groundwater levels in the Basin's observation wells were seasonally variable during 2018. Most wells began the year below the median level but recharged during the spring after receiving snowmelt and normal to above-normal precipitation. 2018 was a unique year in that, instead of the typical decline observed during the summer and early fall months when water demand is high, water levels recharged from the frequent rain and remained above the median.

STREAM FLOW

Observed monthly mean streamflow along the main stem of the Delaware River and its two-largest tributaries, the Lehigh and Schuylkill rivers, was generally normal to above normal during the first half of the year. January's cold weather caused ice jams at several locations in the Upper Basin, with water pooling behind jams at Narrowsburg, N.Y. and Port Jervis, N.Y. on the main stem and at the confluence of the East Branch Delaware River and the Beaver Kill in New York. Further downstream at Trenton, N.J., an ice jam caused the Delaware River to crest slightly above flood stage at 20.38' (flood stage is 20'). Portions of Route 29 near Trenton, N.J. were closed due to flooding.

Flow rates throughout the basin were much above normal during the second half of 2018. The highest flows of the year were experienced during August and September. During August, Delaware River flow rates at Montague and Trenton were 549% and 532% of normal, respectively. The Lehigh River at Bethlehem and the Schuylkill River at Philadelphia were 537% and 864% of normal, respectively. Flows were almost equally as high during September, due to average 60-day rain surpluses of more than 6.0". Flows in the Delaware River at Montague and Trenton were 539% and 481% of normal, respectively. Flows in the Lehigh River at Bethlehem and the Schuylkill River at Philadelphia were 500% and 701% of normal, respectively.

2018 Observed Monthly % of Normal Mean Stream Flow



RESERVOIR STORAGE AND RELEASES

LOWER BASIN

Both Beltzville Reservoir (located on the Pohopoco Creek, a tributary of the Lehigh River) and Blue Marsh Reservoir (located on the Tulpehocken Creek, a tributary of the Schuylkill River) maintained storage in the normal range during 2018. Consequently, the DRBC's Lower Basin drought operating plan was not implemented. Additionally, the Commission was not required to make releases from the Lower Basin reservoirs during 2018 to maintain the streamflow objective of 3,000 cubic feet per second (cfs) at Trenton, N.J.

Storage in Blue Marsh Reservoir was lowered several feet below the normal operating level twice during 2018, in late July and again in mid-September, to create storage for runoff from anticipated heavy rain.

No releases were made from the Merrill Creek Reservoir during 2018. Storage in Merrill Creek Reservoir, located in Phillipsburg, New Jersey, is used to replace evaporative losses caused by power generation when the basin is under DRBC-declared drought operations and the equivalent average daily flow target at Trenton, New Jersey is below 3,000 cfs.

Blue Marsh Lake and Reservoir, Leesport, Pa.

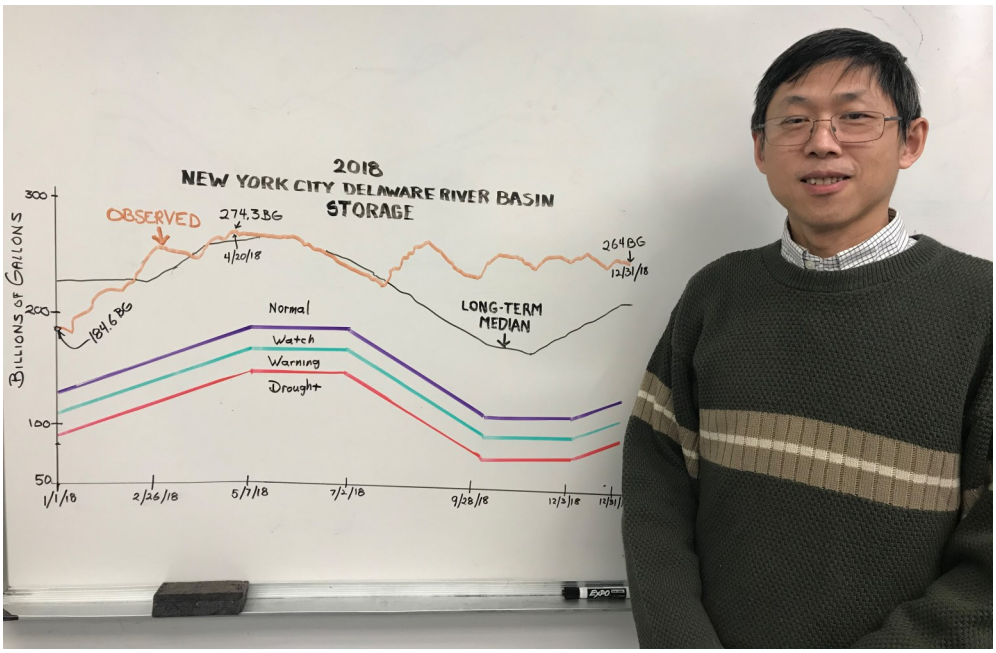
NEW YORK CITY'S RESERVOIRS

The three New York City (NYC) DRB reservoirs, Cannonsville, Pepacton and Neversink, are operated under the Flexible Flow Management Program (FFMP). On Jan. 1, 2018, combined storage in the three reservoirs was 184.6 BG, which is 41 BG below the long-term daily median. By late February, melting snow and rain combined to increase storage to above the median and on April 16, several weeks ahead of the normal May 1 refill date, the reservoirs refilled to 100% usable storage capacity.

Storage in the reservoirs remained at or slightly below the long-term median until late July. From July through December, above normal rainfall maintained the three reservoirs far above the daily median.

The Delaware River Master directed approximately 4 BG of water from the NYC reservoirs during January, June and July 2018 to meet the minimum flow objective at the Delaware River at Montague, NJ. (near where Pa., N.Y. and N.J. meet.) Most of these releases (3.4 BG) were made during a drier period in June and July. In comparison, the River Master directed 31 BG in 2017 and 101 BG in 2001, a drought year.

The combined storage in the three NYC reservoirs is managed to ensure the conservation of regional reservoir storage in times of drought through phased reductions in out-of-basin diversions, reservoir releases and flow objectives for purposes of water supply and flow augmentation in the Delaware River and salinity control in the Delaware River Estuary when necessary.



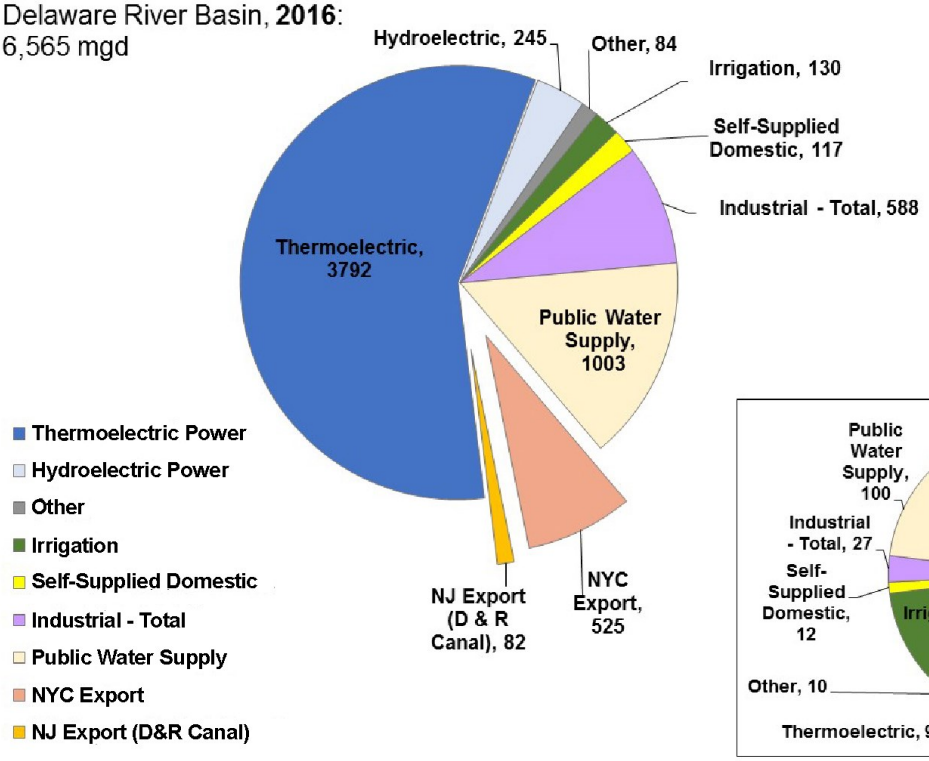
Water Resources Engineer Fanghui Chen, Ph.D., P.E., with a chart depicting the total water storage in the Pepacton, Cannonsville and Neversink reservoirs (owned by New York City) in 2018. Storage levels began the year above normal, and continued to rise until April 20, when they hit a high of 274.3 Billion Gallons (BG). Levels remained high, finishing the year at 264 BG.

WATER WITHDRAWALS AND TRENDS

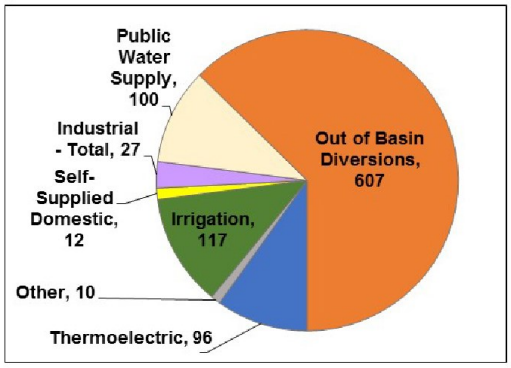
Understanding water withdrawals, water use and supply is integral to the management of water resources. In recent years, our understanding of the ways in which water is withdrawn and used has improved greatly, as have the underlying systems in place to manage the data, meaning that more timely and comprehensive assessments can be made. The chart below shows the basin-wide picture of water withdrawals, exports and consumptive use by sector, based primarily on 2016 calendar year water use data; the data shown represent daily average withdrawals.

Water withdrawals are tracked throughout the Basin to identify key water-using sectors and trends. Accurate and comprehensive water use information enables the proper assessment, planning and management of water resources. The 2016 water withdrawal data were compiled to generate a Basin-wide assessment by water use sector. All data are based on withdrawals reported to state agencies except for data for the Self-Supplied Domestic (individual homeowner wells) sector, which are based on the population from Census 2010 data for populations that reside outside of public water system service areas.

Total Water Withdrawals (ground and surface) from the Delaware River Basin, **2016**: 6,565 mgd



Consumptive Use and Major Basin Exports: 969 mgd



TRENDS

DRBC tracks withdrawals in three sectors closely: public water supply, industrial and thermoelectric. Long-term data for these key sectors extend through calendar year 2016 and provide a monthly time series spanning a period of over 20 years. The public water supply sector's neutral trends are primarily attributed to the influence of conservation practices neutralizing population increases, while industrial use trends are more likely the result of facilities entering or exiting the industrial sector. The thermoelectric sector displays an overall decreasing trend in total water withdrawals.

The public water supply sector has maintained a relatively stable rate of withdrawals and consumptive use despite increasing population in the DRB. This pattern is primarily attributed to the influence of raised public awareness of conservation practices and changes in plumbing codes enacted in the early 1990s. Historic data for industrial withdrawals show a decline from levels in the early 1990s. The closing of the Bethlehem Steel plant in Bethlehem, Pa. in 1995 contributed significantly to the overall decline in water use for this sector. Over the past decade, industrial water use has declined slightly despite numerous facilities changing hands. Several large refineries in the Basin have seen considerable turnover in recent years.

It is likely that public water supply withdrawals and consumptive use will continue to decline relative to population growth as conservation initiatives result in more efficient use of water for public supply. Further improvements in efficiency in water withdrawn by water purveyors could be attained by improving the condition and operation of aging water distribution infrastructure. Water auditing required for the public water supply sector by DRBC may reduce water losses as stakeholders more effectively target their capital investments to improve water supply efficiency, further reducing overall withdrawal volumes and consumptive use.

Where Does the Water Go?

Total ground and surface water withdrawals from the Basin: 6.5 Billion gallons per day

- **Major Exports from the Basin: 607 Million gallons per day**
- **Consumptive Use in the Basin: 362 Million gallons per day**
- **Over 90% of all water used in the Basin is obtained from surface waters.**

Three dominant use sectors account for about 80% of total water withdrawals.

- **Power Generation: 59%**
- **Public Water Supply: 13%**
- **Industrial Use: 8%**

How Much Oxygen Is Enough Oxygen?

DRBC's Continuing Effort to Determine Aquatic Life Designated Uses in the Estuary

Oxygen is necessary for sustaining life for most aquatic wildlife, each species having different tolerances of oxygen concentrations. Fluctuations in concentrations of dissolved oxygen (DO) can occur at various locations and at various times of the year throughout the waters of the Delaware River Basin. Assessment of DO sensitivity is important in determining effects on the aquatic life and ultimately for establishing appropriate water quality standards. Identifying DO needs of sensitive species at different life stages within the Delaware Estuary is a key component of the DRBC's project to review aquatic life uses in the Delaware River estuary.

In 2018, following direction by DRBC, the Academy of Natural Sciences of Drexel University (ANSDU) developed a methodology for evaluating the DO requirements of sensitive species in the estuary.

The Academy of Natural Sciences of DREXEL UNIVERSITY

DO REQUIREMENTS

The objective of this effort was to narrow a candidate species list for DO sensitivity to key sensitive species within the Delaware Estuary and provide information on oxygen requirements at different life stages to serve as a scientific basis for potential future standards, apart from any achievability concerns.

Dissolved Oxygen 101

- **Dissolved Oxygen (DO) is the amount of gaseous oxygen (O2) dissolved in the water.**
- **Pollution is the main cause of DO depletion in the Delaware River Basin's waters. It comes primarily from two classes of sources: "Point Source" pollution originates from any single identifiable outfall, such as an industrial or sewage treatment plant, or in the case of older systems, a combined sewer outfall. "Nonpoint source" pollution generally refers to stormwater runoff from farms and developed areas.**

An Uptick in Monitoring

Water Resources Scientist Elaine Panuccio collects a chlorophyll sample.

In 2018, DRBC initiated extensive monitoring in support of development of the Delaware Estuary nutrients (eutrophication) model. This monitoring included measuring:

- Nutrients in major tributaries including the Delaware River at Trenton, the Schuylkill River at Philadelphia, the Brandywine Creek, the Cooper River and the C&D Canal;
- Parameters related to light extinction including turbidity, secchi depth and photosynthetically active radiation (PAR) in the Delaware Estuary;
- Primary productivity in the Delaware Estuary from Trenton, N.J. to Wilmington, Del.;
- Addition of continuous real-time nitrate spectral analyzers through an agreement with the U.S. Geological Survey; and
- Addition of continuous real-time salinity at the mouth of Delaware Bay at Lewes, Del. and Cape May, N.J. and on the C&D canal at Chesapeake City through an agreement with NOAA.

PCBs Down & Eating Fish Up

Improved Water Quality Leads to Updated Fish Consumption Advisories

In 2018, Delaware and New Jersey eased restrictive fish consumption advisories for their shared waters of the Delaware Estuary. This action is a result of water quality improvements in these waters through the cooperative efforts of the DRBC and state environmental agencies, which have led to declining levels of polychlorinated biphenyls (PCBs), dioxins and furans, pesticides and mercury, all known contaminants that are considered legacy pollutants. Large quantities of these legacy contaminants were released into waterways in the past, and releases continue today from contaminated sites, stormwater discharges, wastewater discharges and air deposition. Municipal wastewater treatment facilities generally remove 80-90% of the PCBs in their systems before it enters the waterways. Due to the ubiquity and persistence of PCBs in the environment, they accumulate in sediments and bioconcentrate in fish tissues.

Declining levels of PCBs reflect the efforts of the DRBC and the states to reduce PCB loadings through the implementation of Total Maximum Daily Loads (Stage 1 TMDLs) developed by DRBC and established by the U.S. EPA in 2003 and 2006. DRBC regulations began requiring dischargers to develop and implement PCB Minimization Plans since 2005 to reduce PCB loadings to the estuary waterways. This collaborative effort has proven quite successful; from 2005 to 2016, PCB loadings by the top ten dischargers in the Delaware River Basin have been reduced by 76%.

Senior Environmental Toxicologist Ronald MacGillivray, Ph.D., works with fish tissue samples in the DRBC's "Fish Lab."

OUR REGULATED COMMUNITY

PROJECT REVIEW

Section 3.8 of the Delaware River Basin Compact provides that no project having a substantial effect on the water resources of the Basin shall be undertaken unless it shall have been first submitted to and approved by the Commission.

These projects generally fall into one of two categories: water withdrawals (ground and/or surface water) or discharges (wastewater treatment). Occasionally, a project may be a combination of these, or a project falls under another category, such as pipelines.

Withdrawal Dockets

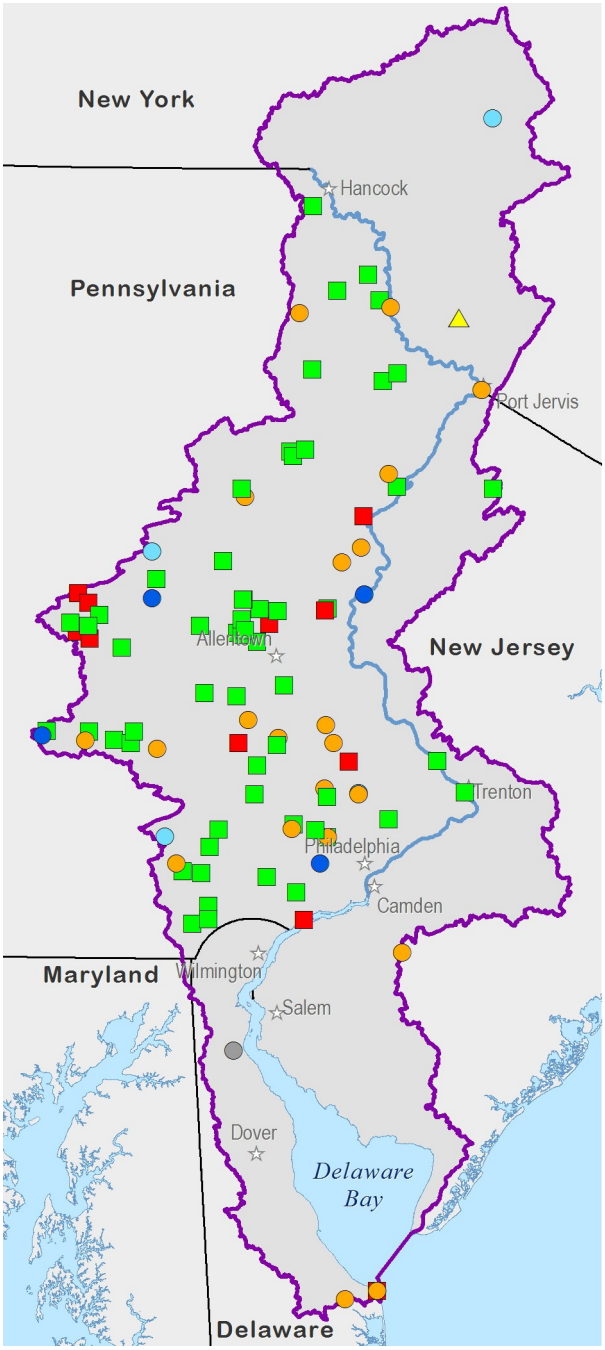
- Groundwater
- Ground and Surface Water
- Surface Water

Discharge Dockets

- Industrial WTP
- Wastewater WTP

Other Dockets

- Other
- Power



Dockets approved by the Commission in 2018.

DOCKETS APPROVED IN 2018

Projects formally reviewed by the Commission are referred to as "dockets." Following a public hearing, dockets are voted on by the Commissioners at their quarterly business meetings, which are open to the public. In 2018, the Commission approved 99 dockets.

Manager of Project Review David Kovach (standing) presents dockets for consideration at a public hearing at the West Trenton, N.J. Fire Hall.

DOCKETS APPROVED MARCH 14, 2018

Coaldale-Lansford-Summit Hill Sewer Authority (PA), wastewater treatment plant, D-1964-027 CP-3.

Lafarge North America (PA), non-contact cooling water discharge, D-1975-115-3.

Robesonia - Wernersville Municipal Authority (PA), wastewater treatment plant, D-1988-023 CP-3.

Schuylkill County Municipal Authority (PA), water filtration plant, D-1991-016 CP-3.

Aqua New Jersey, Inc. (NJ), basin importation and groundwater withdrawal, D-1993-013 CP-4.

East Vincent Township (PA), wastewater treatment plant, D-1993-032 CP-4.

Lyons Borough Municipal Authority (PA), wastewater treatment plant, D-1994-080 CP-4.

Aqua Pennsylvania, Inc. (PA), groundwater withdrawal, D-1997-003 CP-3.

Jackson Township Authority (PA), wastewater treatment plant, D-2007-004 CP-3.

Schuylkill County Municipal Authority – Deer Lake (PA), wastewater treatment plant, D-2010-019 CP-3.

Schuylkill Valley Sewer Authority (PA), wastewater treatment plant, D-2012-029 CP-2.

Lehigh Valley Zoo (PA), wastewater treatment plant, D-2013-006 CP-2.

Schuylkill County Municipal Authority – Indian Run (PA), water filtration plant, D-2013-012 CP-2.

Schuylkill County Municipal Authority – Mount Laurel (PA), water filtration plant, D-2013-013 CP-2.

Pennsylvania Department of Environmental Protection (PADEP), ground and surface water withdrawals, D-2015-021 CP-2.

Aqua Pennsylvania Wastewater, Inc. – Media (PA), wastewater treatment plant, D-1986-042 CP-2.

Upper Gwynedd Township (PA), wastewater treatment plant, D-1991-088 CP-9.

Eagle Creek Hydro Power, LLC (NY), hydroelectric power project, D-2001-038 CP-3.

Nazareth Borough Municipal Authority (PA), wastewater treatment plant, D-2002-038 CP-3.

Lehigh County Authority – Wynnewood Terrace (PA), wastewater treatment plant, D-2010-001 CP-4.

Tyler Hill Camp, Inc. (PA), wastewater treatment plant, D-2017-001-1.

Silver Run Electric, LLC (DE & NJ), electric substation and transmission line, D-2017-008-1.

Radisson Valley Forge Hotel (PA), groundwater withdrawal, D-2017-010-1.

Lehigh County Authority – Sand Spring (PA), wastewater treatment plant, D-2017-012 CP-1.

DOCKETS APPROVED JUNE 13, 2018

Global Advanced Metals USA, Inc. (PA), industrial wastewater treatment plant, D-1970-072-6.

Roamingwood Sewer and Water Association (PA), wastewater treatment plant, D-1988-014 CP-3.

Northeast Land Company (PA), groundwater withdrawal, D-1989-010 CP-4.

Whitemarsh Township Authority (PA), wastewater treatment plant, D-1993-037 CP-5.

Commonwealth National Golf Club (PA), groundwater and surface water withdrawal, D-1996-027-3.

Horsham Water and Sewer Authority (PA), groundwater withdrawal, D-1997-016 CP-4.

Macoby Run Golf Course, Inc. (PA), groundwater withdrawal, D-1998-007-3.

Merck Sharp & Dohme Corporation (PA), groundwater withdrawal, D-1998-014-3. 1998-028-3.

Pennsylvania American Water Company (PA), wastewater treatment plant, D-1999-029 CP-3.

East Marlborough Township (PA), wastewater treatment plant, D-2000-043 CP-4.

Upper Uwchlan Township Municipal Authority (PA), wastewater treatment plant, D2000-055 CP-4.

Avondale Borough (PA), wastewater treatment plant, D-2000-066 CP-3.

Tidewater Utilities, Inc. (DE), groundwater withdrawal, D-2002-004 CP-3.

Bear Creek Mountain Resort and Conference Center (PA) wastewater treatment plant, D-2005-016-3.

Coolbaugh Township (PA), wastewater treatment plant, D-2006-023 CP-5.

East Brandywine Township Municipal Authority (PA), wastewater treatment plant, D-2007-043 CP-3.

Bryn Athyn Borough (PA), wastewater treatment plant, D-2008-013 CP-5.

Tobyhanna Army Depot (PA), wastewater treatment plant, D-2009-041 CP-4.

Pocono Waterworks Company, Inc. (PA), wastewater treatment plant, D-2013-009 CP-2.

SPI Pharma (DE), industrial wastewater treatment plant, D-1969-006-2.

Aqua Pennsylvania, Inc. (PA), groundwater withdrawal, D-1975-078 CP-5.

SPI Pharma (DE), groundwater withdrawal, D-1978-085-2.

Hilltown Township Water & Sewer Authority (PA), groundwater withdrawal, D-1992-020 CP-4.

Camp Starlight, With You, LLC (PA), wastewater treatment plant, D-2017-005-1.

Glencrest Mobile Home Park (PA), wastewater treatment plant, D-2017-007-1.

Merion Golf Club (PA), surface water withdrawal, D-2017-013-1.

DOCKETS APPROVED SEPTEMBER 13, 2018

Minersville Sewer Authority (PA), wastewater treatment plant, D-1970-201 CP-3.

Margaretville Village (NY), groundwater withdrawal, D-1974-157 CP-3.

Lehigh County Authority (PA), Lynn Township Wastewater Treatment Plant, D-1977-041 CP-4.

Borough of Bally (PA), groundwater withdrawal, D-1978-019 CP-3.

Upper Merion Sanitary and Stormwater Authority (PA), Matsunk Wastewater Treatment Plant, D-1987-013 CP-3.

Valley Township (PA), groundwater withdrawal, D-1988-031 CP-4.

Upper Merion Sanitary and Stormwater Authority (PA), Trout Run Wastewater Treatment Plant, D-1992-051 CP-3.

Pennsylvania American Water Company (PA), Coatesville Wastewater Treatment Plant, D-1992-064 CP-4.

Narrowsburg Water District (NY), groundwater withdrawal, D-1992-081 CP-3.

Helix Ironwood, LLC (PA), surface water withdrawal, importation and consumptive use, D-1997-045-3.

Aqua Pennsylvania, Inc. (PA), Lake Harmony Wastewater Treatment Plant, D-2002-006 CP-4.

Borough of Slatington (PA), wastewater treatment plant, D-2003-015 CP-3.

West Bradford Township (PA), DuPont Property Wastewater Treatment Plant, D-2004-022 CP-3.

Hydro Extrusions USA, LLC (PA), industrial wastewater treatment plant, D-2005-001-5.

Evergreen Community Power, LLC (PA), groundwater withdrawal and consumptive use, D-2008-011-2.

Lehighton Water Authority (PA), water filtration plant, D-2014-006 CP-2.

Green Lane–Marlborough Joint Authority (PA) wastewater treatment plant upgrade, D-1966-002 CP-2.

Merrill Creek Owners Group (NJ), Merrill Creek Reservoir, D-1977-110 CP-19.

Berks County (PA) wastewater treatment plant, D-1990-036 CP-2.

Pennsylvania American Water Company, Saw Creek System (PA), groundwater withdrawal, D-1997-034 CP-3.

Borough of Kennett Square (PA), wastewater treatment plant upgrade, D-1999-017 CP-2.

New Hanover Township Authority (PA), wastewater treatment plant, D-1999-040 CP-4.

Aqua Pennsylvania Wastewater, Inc. (PA), Willistown Woods Wastewater Treatment Plant Upgrade, D-2000-024-2.

Lake Bryn Mawr Camp, Inc. (PA), wastewater treatment plant, D-2017-011-1.

SPG, Inc. (PA), Whispering Hollow South Mobile Home Wastewater Treatment Plant, D-2018-002-1.

DOCKETS APPROVED DECEMBER 12, 2018

Forest Park Water (PA), water filtration plant, D-1965-076 CP-12.

Womelsdorf Sewer Authority (PA), wastewater treatment plant, D-1967-084 CP-4.

Matamoras Municipal Authority (PA) wastewater treatment plant, D-1981-078 CP-9.

American Nickeloid Company (PA), wastewater treatment plant, D-1985-030-3.

Morrisville Municipal Authority (PA) wastewater treatment plant, D-1987-008 CP-4.

Middle Smithfield Township (PA), wastewater treatment plant, D-1990-080 CP-4.

Sinking Spring Borough (PA), wastewater treatment plant, D-1994-031 CP-4.

Evonik Corporation (PA), industrial wastewater treatment plant, D-1996-011-4.

Womelsdorf - Robesonia Joint Authority (PA), groundwater withdrawal, D-1998-023 CP-3.

Upper Makefield Township (PA), wastewater treatment plant, D-2002-017 CP-3.

Greater Pottsville Area Sewer Authority (PA), wastewater treatment plant, D-2002-041 CP-3.

WestRock Converting Company (PA), industrial wastewater treatment plant, D-2006-0413.

Green Walk Trout Hatchery, Inc. (PA), groundwater withdrawal, D-2008-008-2.

Lower Milford Township (PA), wastewater treatment plant, D-2009-010 CP-3.

Lehigh Cement Company, LLC (PA), discharge of non-contact cooling water, D-2009-0163.

Parkland School District (PA) wastewater treatment plant, D-2013-007 CP-2.

Pine Forest Camp, Inc. (PA), wastewater treatment plant, D-2013-010 CP-2.

Nestlé Waters North America, Inc. (PA), groundwater withdrawal, D-2013-020-2.

Allied Utility Services, Inc. (PA), wastewater treatment plant, D-1996-025 CP-3.

Perkasie Regional Authority (PA), groundwater withdrawal, D-1997-012 CP-4.

Lehigh Carbon Community College (PA), wastewater treatment plant, D-2009-025 CP-3.

Pike County Commissioners Office (PA), correctional facility wastewater treatment plant, D-2018-001 CP-1.

Keystone Anthracite Company, Inc. (PA), surface water withdrawal, D-2018-003-1.

Village Utility, LLC (NJ) wastewater treatment plant, D-2018-008-1.

HIGH-VOLUME HYDRAULIC FRACTURING RULEMAKING

In Sept. 2017, the DRBC Commissioners ordered the executive director to publish draft rules regarding high-volume hydraulic fracturing in the Basin. The proposed regulations were published on Nov. 30, 2017.

Since March 30, after a 120-day public comment period, which included six public hearings, the Commission has been reviewing and considering the oral comments and written submissions received, determining whether any changes based on the comments are appropriate and preparing a response document. There is no set schedule for a vote by the Commissioners to adopt final rules. As always, the Commission may adopt final rules only at a duly-noticed public meeting.

Members of the public attend one of six public hearings, this one in the Performing Arts Center (PARC) at Ladore Camp Retreat and Conference Center in Waymart, Pa.

You Can't Manage What You Don't Measure

Water System Audits and Water Loss Control

Approximately 80% of basin residents obtain their drinking water from public water supply systems. After power generation, public water supply is the second largest category of withdrawals in the Basin. Nationwide, an estimated six billion gallons per day of water is taken from water resources and never reaches the end user. In the Delaware River Basin, this number is estimated at 150 million gallons per day.

In 2009, the Commission amended its Comprehensive Plan and Water Code to implement an updated water audit approach to identify and manage water loss in the Basin.

Water efficiency is a core DRBC resource management initiative. The commission has a robust water conservation program, of which one crucial component is the requirement for public water suppliers to complete an annual water loss audit using the American Water Works Association's (AWWA) Free Water Audit Software© program for data collection and reporting. The software tracks how effectively water is moved from its source to customers' taps, helping suppliers quantify and account for water losses, which may result from: leaking pipes and services, unauthorized uses and/or inaccuracies with meters that record water delivered from sources and water used by customers.

In 2018, DRBC and the Pa. Department of Environmental Protection (PADEP) partnered to provide free water loss management training for public water suppliers, operators and engineers.

The training taught participants how to use the AWWA program to better understand and mitigate water losses. Sessions were provided to water managers for free, thanks to funding from the PADEP, and were led by George Kunkel, P.E., Principal of Kunkel Water Efficiency Consulting and co-author of the software program, along with DRBC staff.

Pa. Representative Perry Warren (D, PA-31) provides welcoming remarks at the DRBC/PADEP Water Loss Management Training, held at Bucks County Community College, Newtown, Pa.

Advisory Committees

The DRBC's advisory committees provide a forum for the exchange of information and viewpoints on a variety of issues, enhancing communication and coordination. The commissioners recognize the importance of engaging qualified representatives from state/federal government agencies, industry, municipalities, academia, public health and environmental/watershed organizations to inform their policy decisions. Advisory committee and subcommittee meetings are open to the public.

Molly Hesson, consultant for Philadelphia Water Department, briefs members of the Regulated Flow Advisory Committee.

Flood Advisory Committee

Delaware Department of Natural Resources and Environmental Control
Michael Powell, CFM

New Jersey Department of Environmental Protection
Vincent Mazzei, P.E.
John H. Moyle, P.E.
Joseph Ruggeri, P.E., CFM
John Scordato

New York Department of Environmental Conservation
Mark Klotz, P.E

Pennsylvania Department of Environmental Protection
Hoss Liaghat, P.E.

New York City Department of Environmental Protection
Tina Johnstone
Thomas Murphy Jr., P.E.
Dana Olivio
John H. Vickers, P.E.

Delaware Emergency Management Agency
Arthur Paul
Edward Strouse

New Jersey Office of Emergency Management
Sgt. Michael K. Gallagher
Christopher Testa (Committee Chair)

New York State Division of Homeland Security and Emergency Services
Gary L. Tuthill

Pennsylvania Emergency Management Agency
David Williams
Thomas S. Hughes, CEM

Federal Emergency Management Agency
Dave Bollinger, CFM
Scott Duell
Patricia Griggs
J. Andrew Martin, CFM
Alan Springett

U.S. Department of Agriculture - Natural Resources Conservation Service
Hosea Latshaw
David Lamm

U.S. Geological Survey
William F. Coon
Heidi L. Hoppe
Robert G. Reiser
Mark Roland, P.E.
Thomas Suro, P.H., CFM
Kirk White

National Weather Service
Peter Ahnert
Jim Brewster
Al Cope
Laurie Hogan
Raymond Kruzdlo (Committee Vice Chair)
Al Matte
George McKillop
Patrick O'Hara
Ted Rodgers
Ben Schott

U.S. Army Corps of Engineers
Jason F. Miller, P.E.

National Park Service
Kristina Heister
Vince Pareago

Delaware River Joint Toll Bridge Commission
Sean M. Hill

Electric Generation Industry *(Hydropower and Off-Stream Storage)*
Meredith Strasser

County Water Resources Agencies
Gerald Kauffman, P.E.

Emergency Management Representatives
David K. Burd
Steve Hood

Monitoring Advisory and Coordination Committee

Academia
Vacant

Agriculture/Forest Service
Vacant

Delaware
David Wolanski (Committee Chair), Delaware Department of Natural Resources and Environmental Control

Delaware River Basin Fish and Wildlife Cooperative
Sheila Eyler

Land Use Planning Community
Vacant

National Oceanic and Atmospheric Administration
Vacant

National Park Service
Don Hamilton
Jessica Newbern

New Jersey
Leslie McGeorge, New Jersey Department of Environmental Protection
Bruce Friedman, New Jersey Department of Environmental Protection

New York
Sarah Rickard, New York State Department of Environmental Conservation

Pennsylvania
Michael Lookenbill, Pennsylvania Department of Environmental Protection

Regulated Community
Vacant

U.S. Army Corps of Engineers
Vacant

U.S. Environmental Protection Agency
Vacant

U.S. Geological Survey
Tom Imbrigotta

Volunteer Monitoring
Maya K. van Rossum

Regulated Flow Advisory Committee

Delaware Department of Natural Resources and Environmental Control
William Cocke, P.G.

Delaware Geological Survey
Stefanie Baxter, P.G.

New Jersey Department of Environmental Protection
Joseph A. Miri, Ph.D.
Steve Dember

New York City Department of Environmental Protection
Jen Garigliano

New York State Department of Environmental Conservation
Brenan Tarrier (Chair)

Office of the Delaware River Master
Kendra Russell

Pennsylvania Department of Environmental Protection
Jennifer Orr

Philadelphia Water Department
Kelly Anderson

U.S. Army Corps of Engineers
Laura Bittner

Toxics Advisory Committee

Academic
David Velinsky, Ph.D., Academy of Natural Sciences of Drexel University

Keith Cooper, Ph.D., Rutgers University

Dibyendu "Dibs" Sarkar, Ph.D., P.G., Stevens Institute of Technology

Agriculture
Brian F. Oram, P.G.
Paul W. Semmel

Delaware
Richard W. Greene, Ph.D., Division of Waste and Hazardous Substances/Site Investigation and Restoration Section

Environmental/Watershed
Tracy Carluccio, Delaware Riverkeeper Network

Diana Oviedo-Vargas, Ph.D., Stroud Water Research Center

Environmental Protection Agency Region II
Brent Gaylord

Environmental Protection Agency Region III
Kuo-Liang Lai, P.E.

Federal Fish & Wildlife
Clay Stern, U.S. Fish and Wildlife Service

Industry
J. Bart Ruiter, The Chemours Company, FC, LCC

Scott Northey, The Chemours Company, Chambers Works

Daniel Caldwell, Ph.D., CIH, DABT, BECES, Johnson & Johnson

Municipal
Jason Cruz, Philadelphia Water Department
Matthew Fritch, Philadelphia Water Department

Advisory Committees

New Jersey

Biswarup (Roop) Guha, New Jersey Department of Environmental Protection

Sandra M. Goodrow, Ph.D., C.F.M., New Jersey Department of Environmental Protection

Stephen Seeberger, New Jersey Department of Environmental Protection

New York

Scott J. Stoner, New York State Department of Environmental Conservation

Jason R. Fagel, New York State Department of Environmental Conservation

Pennsylvania

Maria Schumack, Pennsylvania Department of Environmental Protection

Public Health

Eric Bind, M.P.P., New Jersey Department of Public Health

Water Management Advisory Committee

Delaware

Steven Smailer, P.G., Department of Natural Resources and Environmental Control

New Jersey

Carolyn Olynyk, Department of Environmental Protection

New York

Erik Schmitt, P.E., Department of Environmental Conservation

Pennsylvania

Hoss Liaghat, P.E., Department of Environmental Protection

U.S. Army Corps of Engineers

Laura Bittner

U.S. Environmental Protection Agency

Katie Lynch

U.S. Geological Survey

Daniel J. Goode, Ph.D.

City of New York

Dana Olivio, New York City Department of Environmental Protection

City of Philadelphia

Kelly Anderson

County Water Agency

Janet L. Bowers, Chester County Water Resource Authority

Water Resources Association

Preston Luitweiler (Committee Chair), Water Resources Association of the Delaware River Basin

Industry

James Mershon, Merrill Creek Reservoir

Water Utility

John Thaeder (Committee Vice-Chair), Artesian Water Company, Inc.

Agriculture

Sandra Howland, New Jersey Department of Agriculture

League of Women Voters or other Civic Organization

Jill Green, League of Woman Voters or Pa.

Environmental Organization

Mary Ellen Noble, Delaware Riverkeeper Network

Watershed Organization

Pete Golod, Upper Delaware Council

Academia

Gerald J. Kauffman, Ph.D., University of Delaware

Recreation

Ann M. Pilcher, Pocono Mountains Visitors Bureau

Fisheries

Sheila Eyler, Ph.D., U.S. Fish & Wildlife Service

Water Quality Advisory Committee

Academia/Science

John K. Jackson, Ph.D., Stroud Water Research Center

Delaware

David Wolanski (Committee Chair), Delaware Dept. of Natural Resources and Environmental Control

John Schneider, Delaware Dept. of Natural Resources and Environmental Control

Environmental Professional

Maya K. van Rossum, Delaware Riverkeeper Network

Local Watershed Organization

Abigail M. Pattishall, Ph.D., Wildlands Conservancey

National Park Service Wild and Scenic Rivers Program

Richard Evans

Peter Sharpe, Ph.D.

New Jersey

Frank Klapinski, New Jersey Department of Environmental Protection

Biswarup (Roop) Guha, New Jersey Department of Environmental Protection

New York

Sarah Rickard, New York State Department of Environmental Conservation

Pennsylvania

Thomas Barron, Pennsylvania Department of Environmental Protection

Matthew D. Kundrat, Ph.D., Pennsylvania Dept. of Environmental Protection

Regulated Community - Industrial

J. Bart Ruiter, The Chemours Company

Kimberly Long, Exelon Corporation

Regulated Community - Municipal

Jason Cruz, Philadelphia Water Department

Bryan P. Lennon, City of Wilmington

U.S. Environmental Protection Agency

Kuo-Liang Lai, P.E.

Brent Gaylord

FINANCIAL SUMMARY

The DRBC operates and maintains two funds for budgeting purposes: a General Operating Fund (GF) and a Water Supply Storage Facilities Fund (WSSF).

THE GENERAL OPERATING FUND

The General Operating Fund is the basic and routine operating budget for the DRBC. It includes all revenues and expenses required for the year-to- year operations and maintenance of the agency. Revenues are provided through several key sources, including signatory party contributions, regulatory program fees, transfers from the WSSF and other sources.

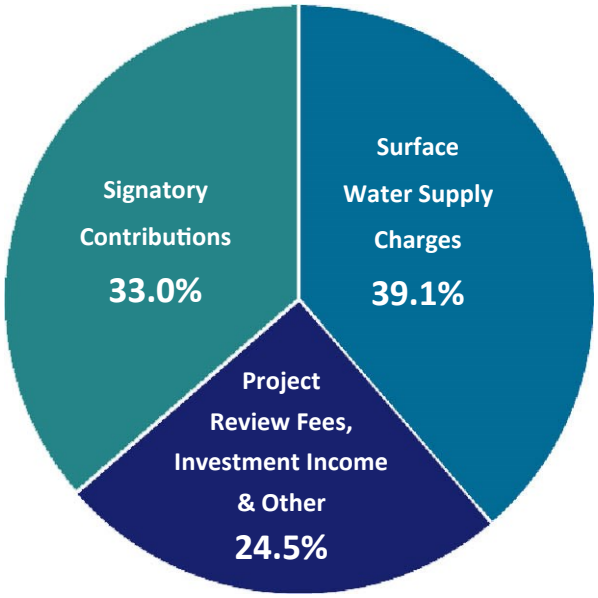
THE WATER SUPPLY STORAGE FACITILITES FUND

The WSSF was created to fund certain water supply storage facility projects in the Basin. The WSSF is used to repay the obligations the DRBC assumed to purchase storage capacity at the federal government's Beltzville and Blue Marsh reservoirs. The WSSF also supports DRBC's pro rata share of the annual operations and maintenance costs of the two reservoirs, the water supply share of any future required improvements at these two facilities, a share of DRBC operating costs to support a sustainable water supply within the Basin (transfers to the GF) and any future required storage in the Basin. Revenues for the WSSF are generated from charges for applicable surface water withdrawals in the Basin. The balance of the WSSF at the end of FY 2018 was $19,937,785.

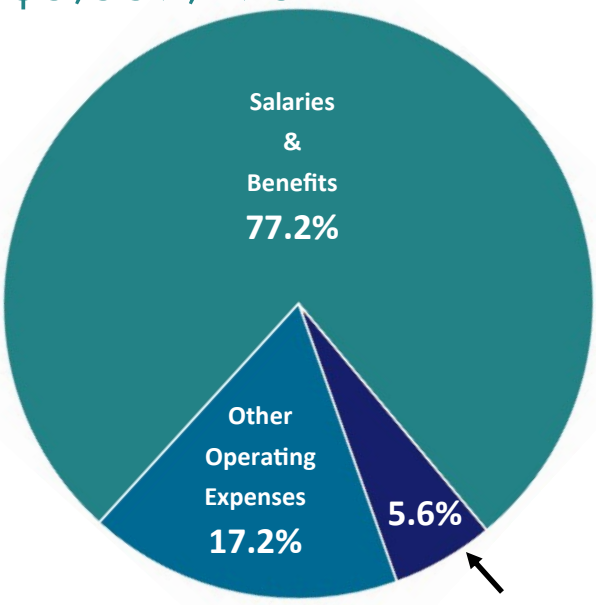
NOTE: The DRBC Fiscal Year (FY) runs July 1 through June 30.

GENERAL FUND

FY 2018 Revenues $5,205,390



FY 2018 Expenses $5,339,195



Independent Financial Audit

DRBC's financial records are audited annually as required by the Delaware River Basin Compact. The most recent annual independent audits are available at www.nj.gov/drbc/about/public/annual-audit.html

PA AUDIT

In November, the Pennsylvania Department of the Auditor General released its Performance Audit Report of the DRBC, mandated by legislation passed by the Pa. General Assembly in 2017.

"The DRBC thanks Auditor General Eugene A. DePasquale and his staff for their professionalism and attention to detail as they completed their charge," said DRBC Executive Director Steve Tambini. "The DRBC generally agrees with the report's findings and recommendations, which reinforce what we already knew: that the expenses of the commission and its officers are reasonable; that while the commission's work is complementary to that of the Pa. Department of Environmental Protection (PADEP), further opportunities to work collaboratively and efficiently should be explored; and that not all commission members are paying their agreed upon contributions to support DRBC's budget."

Pennsylvania Auditor General Eugene DePasquale released the performance audit results at a press conference in Harrisburg on Nov. 8.

The Performance Audit looked at six objectives, including the commission's fixed and variable costs; the costs of salaries, benefits and expense reimbursements to commission officers and employees; contributions by the commonwealth in comparison to those by other members to support the commission's operating expenses; and how to improve efficiency and reduce costs.

The Performance Audit Report is available at https://www.state.nj.us/drbc/library/documents/PaAudGeneral_DRBC-Perf-Audit_Nov2018.pdf .

Outreach

DRBC considers outreach to support the Commission's mission and the needs of interested user groups to be a strategic goal. To that end, DRBC staff took part in numerous outreach events throughout the Basin in 2018. In addition to those featured here, staff also took part in:

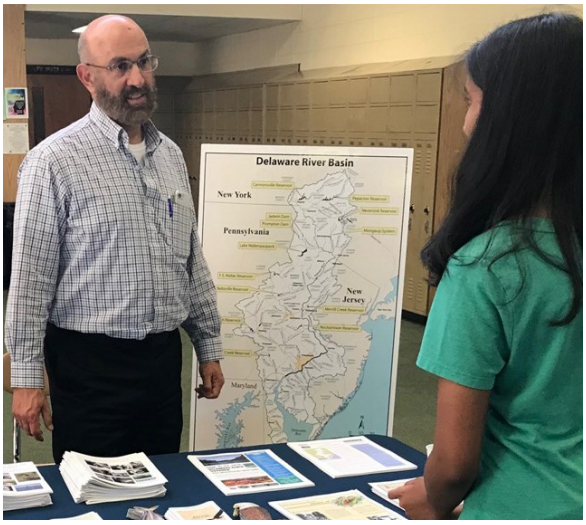
- Delaware Coast Day
- 24th Annual Delaware River Sojourn
- Temple Ambler EarthFest
- Ewing, N.J. High School Environment Club

Lambertville, N.J. Shad Fest attendees check out trays of macroinvertebrates taken from the Delaware River, and listen to Water Resource Scientist Elaine Panuccio explain the relationship between 'macros' and river water quality.

Communications Specialist Kate Schmidt talks about the Delaware River Basin with a group of Playground Camp kids as part of Newtown Township, Pa. Parks and Recreation Department's summer camp program.

Finance and Administration Specialist Denise McHugh asks kids attending Cedar Crest College's Hydromania in Allentown, Pa. how they can help keep waterways clean.

Children attending the Philadelphia Flower Show stopped by the DRBC table to learn about Bald Eagles, as well as different kinds of pollution, using the Commission's Enviroscape watershed model.



Water Resource Management Director Ken Najjar speaks about the basin to a student at the West Windsor—Plainfield High School Green Fair in West Windsor N.J.

Executive Assistant Donna Woolf talks baseball mud with Coast Day attendees at Penn's Landing, Pa.

Children attending Trenton, N.J.'s Fishing Derby use forceps to check out macroinvertebrates taken from the Delaware River, as Manager for Water Quality Management John Yagecic (right) explains what they found and how these "bugs" help us determine the river's water quality.

Trusted Technical Expertise

Commission staff are routinely asked to speak on water resource management and technical issues. In 2018, these included:

Senior Geologist Gregory J. Cavallo, P.G.

- ***A Spatial and Temporal Study of Polychlorinated Biphenyls in Fish Tissue from the Delaware River and Bay*** at the 148th Annual Meeting of the American Fisheries Society
- ***Implementing PCB TMDLs in the Delaware Estuary*** at the Baltimore Region Toxics Workshop

Manager, Water Resource Planning Chad Pindar, P.E.

- ***DRBC Water Demand Management: Benefits of Promoting Best Practices*** at the American Water Resources Association National Conference
- ***Consumptive Use Replacement Program for Power Facilities in the Delaware River Basin*** at the American Water Resources Association National Conference

Manager, Water Resource Operations Amy Shallcross, P.E. (Pictured above)

- ***The Delaware River: Wild,Scenic and Managed*** at the American Water Resources Association National Conference
- ***Water Quality Improvements in the Delaware River Basin*** at the Geological Association of New Jersey Annual Conference

Senior Environmental Toxicologist Ronald MacGillivray, Ph.D.

- ***Emerging Contaminants in the Delaware River Basin*** at Temple University Water and Environmental Technology Seminar
- ***PFAS in Surface Water, Sediment and Fish from the Delaware River*** at the American Water Resources Association National Conference
- ***A Spatial and Temporal Study of Polychlorinated Biphenyls in Fish Tissue from the Delaware River and Bay*** at the 148th Annual Meeting of the American Fisheries Society

Director, Science and Water Quality Management Ken Najjar, Ph.D., P.E.

- ***Consumptive Use Replacement Program for Power Facilities in the Delaware River Basin*** at the American Water Resources Association National Conference

- ***DRBC Water Demand Management: Benefits of Promoting Best Practices*** at the American Water Resources Association National Conference

Water Resource Planner Doug Rowland

- ***DRBC Water Demand Management: Benefits of Promoting Best Practices*** at the American Water Resources Association National Conference

Manager, Water Quality Modeling Namsoo Suk, Ph.D.

- ***The Next Chapter in the Story of Restoring Clean Water to the Delaware River Estuary*** at the American Water Resources Association National Conference
- ***Modeling Eutrophication Processes in the Delaware Estuary to Link Watershed Efforts to Control Nutrient Impacts*** at Delaware Watershed Research Conference

Executive Director Steve Tambini, P.E.

- ***The Delaware River: Wild ,Scenic and Managed*** at the American Water Resources Association National Conference
- ***DRBC Managing Shared Water Resources for over 50 years*** at Pennsylvania Section AWWA Annual Conference
- ***Overview of Basin Water Resource Management and Water Use*** at Coalition for the Delaware River Watershed Annual Forum
- ***The Next Chapter in the Story of Restoring Clean Water to the Delaware River Estuary*** at the AWRA Annual Conference
- ***Water Planning at the Interstate Basin Commissions*** at the National Leadership Institute for State Officials

Manager, Water Quality Assessment John Yagecic, P.E.

- ***Evaluation of the technical, economic, and social impacts associated with updating major wastewater treatment infrastructure to address aquatic life uses and values for the Delaware Estuary*** at the Delaware Watershed Research Conference
- ***Dissolved Oxygen, Aquatic Life Uses, and the Delaware Estuary*** at the Water Resources Association of the Delaware River Basin Annual Fall Conference
- ***Water Quality Improvements in the Delaware River Basin*** at the Geological Association of New Jersey Annual Conference

Manager of Water Resource Planning Chad Pindar, P.E. explains water resource management to members of Pennsylvania's Joint Legislative Conservation Committee aboard the restored oyster schooner AJ Meerwald.

- ***Managing Delaware River Basin Water Resources with Monitoring and Data*** at the NJ Water Environment Association's Annual Conference and Exposition
- ***Past, Present, & Future Water Quality Management in the Delaware River Basin*** at the Pinchot Institute Meeting: Water-Related Research in the Delaware River Basin, Progress and Needs
- ***DRBC Activities in Water Quality Monitoring and Management*** at the Bucks Environmental Action meeting
- ***Using Data to Manage Delaware River Basin Water Resources*** at the American Water Resources Association Philadelphia Section meeting
- ***Dissolved Oxygen in the Delaware Estuary: Past, Present and Future*** at Drexel University

Caring for Our Communities

While the Commission's work is focused on water resource management throughout the Basin, DRBC staffers have embraced the concept of being good neighbors and contributing to their "work" community. In 2018, the DRBC team, which operates out of West Trenton, N.J., participated in many worthy causes. Whether it was preparing groceries for distribution at a local food bank, putting a new coat of paint on the SPLASH Floating Classroom, or donating food for local communities, DRBC staffers were generous with their time. Here are just a few examples:

Water Resource Scientist Elaine Panuccio (left), Aquatic Biologist Jacob Bransky, and Water Quality Assessment Manager John Yagecic pick up trash along the Delaware River at Palmyra Cove, N.J. DRBC volunteers collected about 30 bags of trash and recyclables (glass and plastic bottles and cans).

Support Services Technician Patrick Rago loads up one of the Commission's vehicles with food donations for the Salvation Army of N.J.'s Thanksgiving Food Drive.

From Left: DRBC Water Quality Interns Scott Jedrusiak and Victoria Trucksess and External Affairs and Communications Director Peter Eschbach scrape and paint the Steamboat SPLASH Floating Classroom (www.steamboatclassroom.org), helping get it ready for its annual launch into the Delaware River at Lambertville, N.J.

Finance/Accounting Manager Lulin Zhong (left) and Water Resource Specialist Gail Blum sort and pack grocery donations for distribution to hunger relief programs throughout Mercer County for the Mercer Street Friends Food Bank in Ewing, N.J. In addition to preparing bulk donations, staff also bagged/boxed over 1800 lbs. of food for the Food Bank's Send Hunger Packing program, which provides food to schools to give to their students who need.

Retired and Missed

Carol Adamovic

Accounting Assistant/ Information Resources Coordinator

25 years.

Greg Cavallo, P.G.

Senior Geologist

24 years.

Tom Fikslin, Ph.D.

Director, Science and Water Quality Management

25 years.

Clarke Rupert

Communications Manager

19 years.

Jessica Sanchez, Ph.D.

Senior Water Resource Planner

16 years.

Guido Sosi

Head, Fiscal Section

25 years.

A Look Around the Basin

DRBC's seasonal photo contest highlighted amateur and professional photography representing the beauty, diversity, function and significance of the water resources of the Delaware River Basin. The following represent the seasonal winners, which are just some of the amazing works submitted by many of the Basin's talented residents in 2018.

Bridge Between Two Seasons by Kenvin Haines taken at Mongaup, NY. Fall photo contest winner.

Lazin' at Neshaminy Creek on an Early Summer Day by Paul Michael Bergeron at Neshaminy Creek/Tyler Sate Park, Newtown, Pa. Summer photo contest winner.

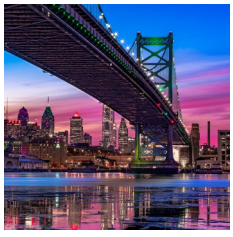
Red-Spotted Newt by Janice Annunziata at Dingman's Ferry, Pa. Spring photo contest winner.

ON THE COVER

Tranquility by Tender Murphy at Delaware River–West Branch

Sojourner Lunch Break by Delaware River Sojourn at Kittatinny Point, Delaware Water Gap

Stonefly Nymph by Raffaela Marano at Shehawken Creek, Pa.



Ben Franklin Bridge by Justin Curtis at Camden, N.J.

25 Cosey Rd., West Trenton, N.J. 08628

WWW.DRBC.GOV