

Delaware River Basin Commission

Celebrating Our 50th Anniversary



The Delaware River • Pennsylvania's River of the Year



The Delaware River Basin Commission (DRBC) is a federal-interstate agency created in 1961 by compact legislation signed into law by President John F. Kennedy and the governors of the four basin states with land draining to the Delaware River. The passage of this compact fifty years ago marked the first time that the federal government and a group of states joined together as equal partners on a regional body with the force of law to oversee a unified approach to managing a river system without regard to political boundaries. The DRBC and the Susquehanna River Basin Commission, created in 1971, are the only two federal-interstate compact agencies in the United States with the federal government and states as voting members.

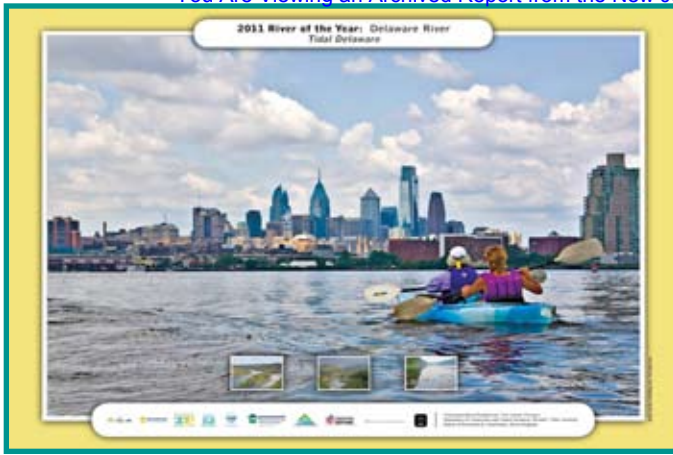
The Delaware is the longest un-dammed river in the United States east of the Mississippi, extending 330 miles from the confluence of its East and West branches at Hancock, N.Y. to the mouth of the Delaware Bay where it meets the Atlantic Ocean. In all, the Delaware River Basin (DRB) contains 13,539 square miles, draining parts of Pennsylvania, New Jersey, New York, and Delaware. Over 15 million people (approximately five percent of the nation's population) rely on the waters of the DRB for multiple uses, but the watershed drains only four-tenths of one percent of the total continental U.S. land area. The population served by DRB water includes over seven million people in the New York City area and northern New Jersey who live outside the basin. New York City gets roughly half its water from three large reservoirs located on tributaries to the Delaware.

This 50th anniversary publication, which covers calendar year 2011, was compiled and edited by DRBC Communications Manager Clarke Rupert and created by DRBC Graphic Designer Susan Owens. Numerous commission staff provided valuable assistance. It is available on the commission's web site at www.drbc.net. Copies are available upon request by contacting the DRBC (P.O. Box 7360, West Trenton, NJ 08628; 609-883-9500; clarke.rupert@drbc.state.nj.us).

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1. Bald eagle on the Delaware River at Narrowsburg, N.Y.: David B. Soete
2. Ceremonial signing of the Delaware River Basin Compact at the White House: DRBC Collection, 1961
3. Sunset view of the Delaware Memorial Bridge: Thomas Fikslin, 2007
4. Upper Delaware River above Barryville, N.Y.: Troy Bystrom, 2010
5. Damage to the Delaware River bridge linking Phillipsburg, N.J. and Easton, Pa. during the flood of record: DRBC Collection, 1955
6. Pre-World War II *Philadelphia Record* editorial page cartoon depicting serious water pollution in the Delaware and Schuylkill rivers: Water Resources Association of the Delaware River Basin Collection, 1937
7. Dry river bed near the Calhoun Street Bridge during the basin's six-year drought of record: DRBC Collection, 1963
8. Kayaking on the Delaware River: Steve Klaver Photos LLC
9. DRBC meeting attended by the four basin state governors and the U.S. Secretary of the Interior (federal member): DRBC Collection, 1973
10. Aerial view of the Delaware River at Tocks Island: DRBC Collection
11. View of the Delaware Bay at Cape Henlopen State Park, Lewes, Del., where it meets the Atlantic Ocean: Clarke Rupert, 2005
12. Event in Wilmington, Del. celebrating the completion of the Water Resources Plan for the Delaware River Basin: DRBC Collection, 2004
13. U.S. Brig *Niagara*, Pennsylvania's official flagship, during the parade of tall ships on the Delaware: Clarke Rupert, 2000
14. Christmas Day reenactment of Washington Crossing the Delaware: Kenneth Najjar, 2002
15. Lewis Fishery crew showing their catch of American shad at the Lambertville (N.J.) Shad Festival: Clarke Rupert, 1999
16. Program for the Delaware River Celebration: DRBC Collection, 2011





The commemorative poster of the Tidal Delaware featured the photo, "Paddling into Philadelphia," which was donated by area photographer Andy Smith. This was one of four posters created with funding provided by the Pennsylvania Department of Conservation and Natural Resources to honor the selection of the Delaware as the Commonwealth's 2011 "River of the Year." Additional information can be found in the article appearing on page 12.

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Executive Director's Message

By Carol R. Collier

"We are glad to join with Delaware, New Jersey, New York, and Pennsylvania in this bold venture. The task set for the Commission will not be easy to achieve, but we are confident that the cooperation that has brought forth this Compact will endure, and that working together real progress can be made for the people of the Basin."

President John F. Kennedy, Nov. 2, 1961

When President Kennedy offered these remarks at the ceremonial signing of the Delaware River Basin Compact 50 years ago, "environment" was largely an unused word in our nation's collective vocabulary. Rachel Carson's *Silent Spring* was not yet published and I doubt that the idea of holding the first Earth Day nine years later was even a dream in the mind of its founder, Senator Gaylord Nelson. There was no Clean Water Act, no EPA, no DNREC, no NJDEP, no NYSDEC, and no PADEP. Yet, there was plenty of pollution in water bodies like the Delaware River. Pilots approaching Philadelphia International Airport even reported they could smell the river from their cockpits. Only seven years earlier, the justices of the U.S. Supreme Court were called upon to resolve an interstate water dispute that centered on the shared waters of the Delaware River. And just six years earlier, a terrible flood in the Delaware Basin claimed a hundred lives and caused millions of dollars in property damage.

We were very fortunate to have visionary leaders in our four states and the federal government who chose to embark on a new governmental experiment in 1961 to address the issues of pollution, water disputes, and floods in the Delaware Basin, and who believed that it was time to work together to manage the shared water resources of an interstate river basin without regard to political boundaries. They would do so as equals, each with one and only one vote.

In April 1969, New York Governor Nelson Rockefeller said:

"As one of the five signators of the compact creating the commission and the only charter member still surviving, I am deeply mindful of what we set out to achieve originally. We wanted a genuine partnership among the four states that contain the Delaware River Basin and the federal government—a partnership that could carry out true regional development of the basin. We viewed our efforts as a pioneering experiment in creative federalism. We are well pleased with the results. ... Time and time again since its creation, we have seen the commission act as a single, unified agent of the states in successfully handling a variety of water problems—some of long-range impact and others brought on by unprecedented events."

The accomplishments are many and highlights can be viewed beginning on page eight of this annual report. To me, the five most significant are: 1) an effective and adaptive drought management plan that has greatly minimized conflict in the basin; 2) vastly improved water quality in the estuary and uniform instream standards for the shared waters; 3) creation of the Special Protection Waters Program (SPW) to protect the existing high water quality of the National Wild and Scenic-designated non-tidal river; 4) development of a flood mitigation strategy following the major floods of 2004–2006; and 5) development of an extensive monitoring, modeling, and assessment program to evaluate existing conditions and trends. All of this could not have been done without the efforts of our state and federal agency partners, stakeholder involvement through our advisory committees, and an open public process.

I believe Bruce Hooper summed up the value of river basin commissions quite well when he wrote in a report for the Institute of Water Resources of the U.S. Army Corps of Engineers:

"Effective governance in the water sector is not linear, prescriptive and logical; rather it tends to be adaptive and 'messy,' responding to the dynamic nature of the political and economic forces operating at the time, and in response to changing environmental conditions (floods, hurricanes, droughts)."

There is nothing static about managing a watershed. Like any natural system, a river is dynamic, presenting new problems to solve around every bend. The DRBC and other river basin commissions create important forums for coordinated response to changing conditions. This is always important, but especially during times like now when available government resources are stretched. The DRBC leverages the public dollars contributed by its five members for a greater return on investment.

On our 50th anniversary, we remember where we've been and our many achievements, but we also look to the future. While passing the 50-year mark might conjure images of a venerable DRBC, I want to move toward a more nimble DRBC, developing programs that reduce duplication of state programs and focus on the needs of the future. Times have changed since 1961, but I still firmly believe that river basin commissions are needed now more than ever. Holistic watershed management is the most environmentally and cost-effective way to manage water resources. We must now assess potential changes to the Delaware River Basin over the next 50 years and develop management strategies to increase resiliency and decrease risk. The emphasis must be on development of a sustainable water supply based on assessment of need (human and ecological), optimization of existing supply systems and instream flows, and non-structural and structural alternatives. Water management in the future will be different than we have experienced in the past. Drivers of change will include population growth and re-distribution, evolution in energy production technologies, natural gas development in the headwaters, developing science on ecological flow needs, changes in how point and non-point source pollution are managed, greater need for flood protection, and last, but not least, climate change including sea level rise, increasing temperature, and precipitation pattern changes. Our watershed must be prepared so planning, monitoring, assessment, and direction-setting are essential.

In order for the DRBC to be the effective tool to help the four states and federal government address the shared challenges facing the Delaware Basin over the next 50 years, its five signatory members also will need to give attention to the sustainable funding needs of the commission to carry out this important work. The 100-year compact creating the DRBC stipulates that the five signatory parties agree to support the commission's annual current expense budget. Unfortunately, the compact gives the commission very few other revenue options to support our annual operating budget. My hope is that over the next 50 years the DRBC will receive the financial support as envisioned by President Kennedy and the four governors in 1961 when they signed the compact into law.

In closing, I want to take this opportunity to salute all of the past and present commissioners, DRBC staff, and our many partners and stakeholders who have all worked side by side over the past 50 years to preserve and protect the national treasure we call the Delaware River. Much has been accomplished together in what President Kennedy called "this bold venture," but many challenges await our attention. I look forward to working with you in meeting those challenges.



Carol R. Collier receives a framed resolution from Susquehanna River Basin Commission (SRBC) Executive Director Paul Swartz honoring the DRBC on its 50th anniversary. The SRBC resolution was presented at the "Delaware River Celebration" on Oct. 19. (Photo by David B. Soete)

Carol R. Collier

A Unique Partnership

Years before there was a U.S. Environmental Protection Agency, or a federal Clean Water Act, or even an environmental movement, a little government agency was hard at work restoring life to one of America's most polluted rivers.

A pioneer in environmental protection, the Delaware River Basin Commission got its start on October 27, 1961, the day the Delaware River Basin Compact became law. The compact's signing by President Kennedy and four governors marked the first time since the nation's birth that the federal government and a group of states joined as equal partners in a river basin planning, development, and regulatory agency.

The clean-up of the Delaware and numerous other DRBC accomplishments are rooted in the compact's chief canon—that the waters and related resources of the Delaware River Basin are regional assets vested with local, state, and national interests for which there is a joint responsibility.

Almost 40 years after the compact was signed, Secretary of State Madeline Albright perhaps unwittingly acknowledged the foresight of its authors. In an Earth Day speech on August 12, 2000, she stated:

“Experts tell us that water management is best done on a watershed or basinwide basis. This requires all who have a stake, whether in or outside government, to join in developing approaches tailored to regional needs.”

The commission is unique in that the federal government and the four basin states (New York, Pennsylvania, New Jersey, and Delaware) are equal partners. They have the collective authority to enter into binding agreements on all water-related issues in the basin, located in one of the most densely populated and intensively industrialized regions of the United States. Interstate disputes are settled by a vote of the members, an act that has the force of law without further state or congressional action.

Another unique feature is that the commission, with some 41 full-time employees, can set water quality standards and allocate surface and groundwater within the basin without regard to political boundaries. Such large federal agencies as the E.P.A. and the U.S. Army Corps of Engineers lack such authority. And the four basin states lack the territorial jurisdiction to address problems that transcend state borders. The commission has that jurisdiction and charge.

Since its inception, the commission has demonstrated its



President John F. Kennedy and the basin state governors sign ceremonial compact documents at the White House on Nov. 2, 1961. Seated (from left to right) are Gov. Robert Meyner of New Jersey, Gov. Elbert Carvel of Delaware, Gov. David Lawrence of Pennsylvania, and President Kennedy. Gov. Nelson Rockefeller of New York was unable to attend. Standing (from left to right) are William Miller, counsel to the Delaware River Basin Advisory Committee (DRBAC) who drafted the compact and would later serve as counsel to the DRBC; Frank Barry of the U.S. Interior Department; W. Brinton Whitall, a DRBAC staff member who will become the DRBC's first secretary; Gen. Norman Lack (leaning towards table), alternate DRBC commissioner from Delaware; Philadelphia Mayor Richardson Dilworth; Harold Wilm, alternate DRBC commissioner from New York; Dr. Maurice Goddard, secretary of the Pennsylvania Department of Forests and Waters who served as a DRBC commissioner for 18 years; Vincent Terenzio, New York City Water Board member; and Arthur Ford, the water board's chairman.

ability to use sound science, adaptation, and collaboration to bring about modifications to the 1954 U.S. Supreme Court Decree that apportioned the shared waters of the Delaware River through prescribed releases and diversions. On numerous occasions the commission has brought together and provided support to the decree parties (the four basin states, plus New York City) as they hammer out solutions to water allocation disputes and respond to evolving water challenges.

The commission's formation changed the Delaware Valley from an arena of conflict to a model of federal-state cooperation—unlike other parts of the country where across-the-border water squabbles continue to run up huge litigation costs. The financial savings in legal fees to all five commission members have far exceeded DRBC's operating costs.

Blazing a new trail in water pollution abatement, the DRBC in 1967 adopted the most comprehensive water quality standards of any interstate river basin in the nation. The standards, which focused on dissolved oxygen levels, were tied to an innovative wasteload allocation program that factored

in the waste assimilative capacity of the tidal river. Interior Secretary Udall declared at the time:

“Only the Delaware among the nation’s river basins is moving into high gear in its program to combat water pollution.”

A year later, the DRBC adopted regulations for implementing and enforcing the standards, prompting the Federal Water Pollution Control Administration to observe:

“This is the only place in the country where such a procedure is being followed. Hopefully, it will provide a model for other regulatory agencies.”

In years since, the commission has added to its regulatory package, including adoption of standards to protect the existing high water quality in the non-tidal Delaware River.

And using the same concept it did in the 1960s, the DRBC has established standards for toxic pollutants found in the river’s tidal reach, which serves as the common border for Pennsylvania, New Jersey, and Delaware. Numerous substances are covered under the rules, including PCBs and pesticides like DDT.

This program highlights the merits of ignoring political boundaries when managing a resource like water. Initially the states had independently developed water quality criteria for the toxic substances to meet requirements of the federal Clean Water Act. Problems inherent in this splintered approach, however, soon became apparent and the states turned to the commission for help. The solution was the formation of a DRBC Toxics Management Program to address the collective needs and goals of the four states and the federal government. After all, it was the health of a river they were concerned with, no matter where the water traveled.

And that was exactly what Congress had in mind when it voted to create the commission back in 1961:

“The establishment of a single agency to coordinate federal interests in the Delaware River Basin is of as much importance as the joining together of the four states and the resultant coordination of the various state activities. In brief, there is one river, one basin, all water resources are functionally inter-related, and each one is dependent upon the other. Therefore, one comprehensive plan and one coordinating and integrating agency is essential for efficient development and operation.”

Remarks by President John F. Kennedy at the Ceremonial Signing of the Delaware River Basin Compact on Nov. 2, 1961

“Today’s formal signing of the Delaware River Basin Compact is a significant event. Its significance lies in the unique character of the Compact and the great hope for comprehensive plans for full and effective development of the Delaware River Valley.

The highly industrialized character of the Basin and the heavy population concentrated in the region presents a real challenge to the Commission in its efforts to devise a water resource program suited to the area’s needs.

Included within the Commission’s jurisdiction is the control and development of adequate water supplies, pollution control, flood protection, watershed management, recreation, hydroelectric power, and the regulation of withdrawals and the diversion of water.

I am designating the Honorable Stewart L. Udall, the Secretary of the Interior, to be the Federal representative on the Commission. I know he will work with and have the counsel and cooperation of the many departments and agencies of the Federal Government concerned with water and resource development. I am sorry he is not with us today, but as you know, he is out of the country in Japan. He has, however, expressed his willingness to serve in this capacity, and I know he shares the optimism of the four States concerning the future of the Delaware Basin.

We are glad to join with Delaware, New Jersey, New York, and Pennsylvania in this bold venture. The task set for the Commission will not be easy to achieve, but we are confident that the cooperation that has brought forth this Compact will endure, and that working together real progress can be made for the people of the Basin.”

In addition to water quality issues, the commission has programs that address water supply allocation, regulatory review of large water resource projects like waste treatment plants, water conservation, watershed planning, drought management, flood loss reduction, and recreation.

The commission's water conservation programs got underway before the concept gained popularity with other agencies. It recognized early on that it was necessary to cut back on the demand side of water supply since a strong environmental voice and a shortage of federal cash had pushed structural solutions (like new reservoirs) pretty much off the table.

For example, the commission in 1988 established water conservation performance standards for plumbing fixtures such as toilets, faucets, and shower heads that are installed during new construction or major renovations. Significant basinwide savings are attributable to the use of these water conserving devices and will continue in the future. More recently, the DRBC revised its rules in 2009 to implement an updated water audit approach to identify and control water loss in the basin, which is estimated at 150 million gallons per day.

The commission's drought management plan also is designed to save water while augmenting natural river flows through reservoir releases to help protect aquatic life and meet the needs of millions of people living downstream. The additional fresh water also helps repel the migration of salty water from the bay which can threaten upstream water supplies, cause corrosion problems for industries that use Delaware River water, and increase treatment costs.

The DRBC's ex officio members are the four basin state governors and the commander of the U.S. Army Corps of Engineers North Atlantic Division who represents the federal government. The five members appoint alternate commissioners, with the governors traditionally selecting high ranking officials from their environmental agencies.

The fact that five separate governmental bodies with their own sovereign powers can successfully work together on an equal footing in managing a common resource has caught the eye of other river managers not only in the United States. Commission representatives have been invited to foreign countries to tell the DRBC story and to offer help in developing new water supply and pollution abatement

programs. And delegations from around the globe have visited the commission offices in West Trenton, N.J. to learn about the DRBC's unique governing powers.

The commission's approach to watershed management places great emphasis on outreach and public involvement. It uses numerous advisory committees to provide input to help shape policy and craft new regulations. Committee members represent a cross cut of basin interests—agriculture, government, academia, business, industry, and environmental advocacy.

On the commission's 25th anniversary in 1986, Marilyn Reeves, a director of the League of Women Voters of the United States, touched on the importance of constituent input:

"In the years ahead the problems of water will be defined and solved through the same imperfect process—a mix of science, uncertainty, value judgments, public perception, and political compromises. Public participation is the only way to ensure that all the elements of that mix are fairly considered."

Interior Secretary Udall, appointed by President Kennedy as the commission's first federal member, was the keynote speaker at the 1986 event that recognized a quarter century of hard earned achievements. He spoke of the commission's charge to care for the gift of water for the next generation.

"The best things in life are free," he said. "Natural beauty, clean air, clean water. You have to earn them in a way, but they are free. And they must be preserved."

Editor's Note: This article originally appeared in the DRBC's 2000 annual report and was written by Christopher M. Roberts, the commission's public information officer from 1986 to 2004. The text has been edited to update information, where appropriate.

The Delaware River Basin Advisory Committee (DRBAC) was established as the result of a 1955 agreement among the governors of the four basin states and the mayors of Philadelphia and New York City to unite in a drive to seek basinwide solutions to the water resource challenges of the Delaware Valley. As described in its third annual report, the DRBAC was “a temporary agency that will disband after the current survey of the water resources of the basin is completed and an appropriate course of action recommended to the governments involved.” Its work led to the drafting of the Delaware River Basin Compact and the DRBC’s creation in 1961. Shortly thereafter, the DRBAC terminated its activities in the spring of 1962.

Barbara Harley served as the administrative assistant to Walter Phillips, the DRBAC’s executive secretary. In 2009, Ms. Harley contacted the DRBC to offer some historical documents for the commission’s library. She also shared these very interesting, personal observations:

“In the beginning was Joe Clark, former mayor of Philadelphia and then Senator from Pennsylvania, a pioneering, creative, and strategic thinker among the leadership of Philadelphia. Also, there was Walter Phillips, another Philadelphia leader from a leading family who had been Mayor Clark’s right hand man in City Hall.

In the mid-50s, there grew a great concern about the conditions of the Delaware River and the assaults on its waters from storms, pollution, and population. Some astounding leaders from the various states actually were able to come together with the Corps of Engineers to fashion an organization to begin worrying about what the problems were and the solutions that might be possible: The Delaware River Basin Advisory Committee. Somehow, Walter and the others found two extraordinary young visionaries and dedicated socially conscious individuals who were years ahead of their time: W. Brinton Whitall and Blair Bower. They were both environmentalists and social stewards of the land well before those were fashionable. ‘Buzz’ Whitall and Blair Bower helped fashion the politically possible out of the visionary.

As a quiet, supportive administrative assistant to Walter Phillips, I had the amazing good fortune to watch governors, mayors, their economic development professionals, and staff members work with the DRBAC to hold meetings, present arguments that became a framework for consensus among the populations and decision makers throughout the region.

We all knew we were making history throughout this effort because no one and no group had been able to look at a major river basin before in this way and facilitate rational decisions along the river banks as happened in those late 50’s and early 60’s. Dr. Roscoe Martin of Syracuse produced a study that helped validate the planning of the DRBAC and gave the politicians useful arguments.

It was a heady time.”



Shown here sharing a laugh at DRBAC’s second “summit meeting” on Sept. 30, 1959 (from left to right) are Philadelphia Mayor Richardson Dilworth, New Jersey Gov. Robert Meyner, and Pennsylvania Gov. David Lawrence. It was at this meeting that the four governors and two mayors accepted a recommendation for a joint federal-state commission to be created by compact between the states and the federal government. They directed the DRBAC to draft the necessary legislation that would eventually lead to the DRBC’s creation.

Accomplishments and Milestones over the First 50 Years of the

DELAWARE RIVER BASIN COMMISSION

ENVIRONMENTAL MILESTONES

1961: Delaware River Basin Compact 1968: Wild and Scenic Rivers Act 1970: 1st Earth Day; U.S. EPA, DNREC, NJDEP, NYSDEC, PADER created
 1962: Rachel Carson's *Silent Spring* helps to start the modern environmental movement 1971: Susquehanna River Basin Compact

1961

The DRBC is created when concurrent compact legislation ratified by Delaware, New Jersey, New York, Pennsylvania, and the U.S. Congress becomes law. President John F. Kennedy hosts a ceremonial signing of the compact at the White House on November 2. The first meeting of the DRBC takes place a month later on December 13.



1968

The commission sets national precedent in its water pollution abatement campaign, approving regulations to implement water quality standards it adopted in 1967 for the Delaware Estuary that are tied to an innovative wasteload allocation program.

1975

In a split vote, DRBC commissioners recommend that Congress not appropriate funds for the construction of the Tocks Island Dam project on the Delaware River.



1973

The DRBC adopts a regulation requiring metering of customer connections of new, major water supply systems, kicking off a water conservation campaign years before it becomes fashionable with other agencies.

1966

The DRBC publishes its popular Delaware River recreation maps. The maps are updated in 1979, 1991, and 2007.

DRBC MILESTONES

1962

The DRBC approves its first comprehensive plan, with a dozen multi-purpose reservoir projects, including the giant Tocks Island impoundment planned for the main stem Delaware River.



1962

James F. Wright is appointed as the DRBC's first executive director.

1965

The DRBC declares a state of water supply emergency and unleashes a fundamental tenet of the compact—to settle water disputes through an administrative process. The DRBC's role is pivotal in negotiating successful, out-of-court policy on emergency water allocations. The basin's "drought of record," which began in 1961, finally eases in 1967.



1971

Construction of Beltzville Reservoir at the headwaters of the Lehigh River is completed at a cost of \$23 million. Releases from this U.S. Army Corps of Engineers' impoundment (plus releases from Blue Marsh Reservoir, then under construction) help improve streamflows, enhance water quality, and protect fisheries.



1977

Gerald M. Hansler is sworn in as the commission's second executive director.

1977

DRBC regulations take effect to restrict development in the 100-year floodplain and prohibit development in the floodway. They apply to non-tidal portions of the Delaware River and its tributaries.

HYDROLOGIC MILESTONES

1961 1962 1963 1964 1965 1966 1967

- Delaware River at Trenton, N.J. crests over Flood Stage
- DRBC-Declared Drought Action
- Drought of Record



(From left to right) New York Gov. Nelson Rockefeller, Pennsylvania Gov. David Lawrence, Interior Secretary Stewart Udall (President Kennedy's appointed federal representative), New Jersey Gov. Robert Meyner, and Norman Lack (Delaware's alternate commissioner) attending the DRBC's first meeting in Princeton, N.J. on Dec. 13, 1961.



(From left to right) New Jersey Gov. Brendan Byrne, Delaware Gov. Sherman Tribbitt, Pennsylvania Gov. Milton Shapp, and Ogden Reid (New York's alternate commissioner) at the July 31, 1975 meeting where the DRBC votes 3 to 1 against the construction of Tocks Island Dam. Pennsylvania dissented and the United States, as sponsor of the project, abstained.

1972: Federal Water Pollution Control Act (Clean Water Act) 1988: U.S. Congress designates the Delaware and Lehigh National Heritage Corridor
 1981: Lambertville, N.J. holds its 1st annual festival to celebrate the shad's return to the Delaware River 1992: U.S. Congress deauthorizes the Tocks Island Dam project



1983
 After four years of intense deliberations, the Interstate Water Management ("Good Faith") Report is approved. It makes mid-course corrections to the 1954 U.S. Supreme Court decree that apportioned the waters of the Delaware and lays the framework for a drought operating plan. The plan is used successfully during two water supply emergencies in the 1980s.

1981
 The Level B Study, part of a planning process to guide the DRBC in revising its long-range master plan in view of the Tocks Island decision, is released. Water conservation is a keystone of the program, which also recommends enlarging existing reservoirs to bolster water supply storage.

1986
 The commission's water conservation program hits full stride with adoption of regulations requiring the source metering of large water withdrawals. In the next six years the adoption of additional regulations and programs establish the DRBC as an international leader in the water conservation arena.



1995
 As it has since its creation, the commission plays host to foreign delegations as part of an informal program to help friends overseas solve water-related problems. Delegations from more than 20 nations have toured the basin and visited the DRBC's offices over the years.

1998
 The DRBC amends its regulations originally adopted in 1980 that protect the limited groundwater resources in heavily populated portions of southeastern Pennsylvania by establishing withdrawal limits for 14 watersheds.

1998
 Carol R. Collier is sworn in as the commission's third executive director, becoming the first woman to head an interstate-federal compact agency.



1992
 The DRBC adopts Special Protection Waters (SPW) anti-degradation regulations intended to "keeping the clean water clean" in the 121-mile stretch of the upper and middle Delaware, most of which is federally designated as "Wild and Scenic."

1995
 A DRBC-sponsored project designed to prevent or reduce Delaware River flooding in the Port Jervis, N.Y.-area is completed.

1985

1981
 Fred Lewis, who operates the only commercial shad fishery on the non-tidal Delaware River, nets 6,392 shad—the biggest catch since 1896. The return of this popular game fish is linked directly to water quality improvement.

1985
 Construction begins on Merrill Creek Reservoir, designed to provide make-up water for riverbank electric generating plants during low flow conditions on the Delaware. The commission directed in-basin electrical utilities to build the \$217 million impoundment or face cutbacks during droughts. It becomes operational in 1988.



1988
 The Delaware Bay and tidal reach of the Delaware River are added to the National Estuary Program, a project set up to protect estuarine systems of national significance.

1993
 Working with the U.S. Army Corps of Engineers, the DRBC completes flood stage forecast mapping for a 65-mile reach of the Delaware River from Belvidere, N.J. downstream to Trenton, N.J.

1993
 The Maurice River and several tributaries (including Menantico and Muskee Creeks and the Manumuskin River) are added to the National Wild and Scenic River System by the U.S. Congress and President Bill Clinton.



1996
 The DRBC adopts regulations governing the discharge of toxic pollutants from wastewater treatment plants to the tidal Delaware River. Numerous toxic substances, some carcinogenic, are covered under the new rules.

1999
 The commission amends its Groundwater Protected Area Regulations for Southeastern Pennsylvania, placing withdrawal limits on 62 additional watersheds.

1999
 The four basin state governors sign a resolution directing the commission to develop a visionary blueprint for the watershed's future and calls for a Watershed Advisory Council to help forge this plan. The Governors' Summit, attended by Delaware Gov. Thomas Carper and New Jersey Gov. Christine Todd Whitman, was the second step in the year-long "Flowing Toward the Future" process that also included workshops held throughout the basin and a watershed-wide conference in Philadelphia.

1978
 Two reaches of the Delaware River totaling over 100 miles are added to the National Wild and Scenic Rivers System by the U.S. Congress and President Jimmy Carter. The DRBC helps draft the enabling federal legislation.

1985
 The DRBC adopts a basinwide well registration program, an integral component of its rapidly expanding groundwater management campaign.

1980

1981

1982

1983

1984

1985

1986

1989

1991

1992

1993

1995

1996

1997

1998

1999



New Jersey Gov. Thomas Kean (*second from right*) heads up the Merrill Creek Reservoir ground-breaking ceremonies on Sept. 23, 1985. Also digging in (*from left to right*) are Robert Touhey (Delaware's alternate commissioner), R. Timothy Weston (Pennsylvania's alternate commissioner), DRBC Executive Director Gerald Hansler, and Dirk Hofman (New Jersey's alternate commissioner). Storage in this reservoir, located near Phillipsburg, N.J., is used to replace evaporative water losses caused by power generation when the basin is under DRBC drought operations.



Delaware Gov. Thomas Carper signs the resolution calling for a new comprehensive water resources plan for the basin as New Jersey Gov. Christine Todd Whitman looks on. The signing ceremony took place during the Governors' Summit held on Sept. 29, 1999 at the New Jersey State Aquarium (now known as Adventure Aquarium) in Camden.

Accomplishments and Milestones over the First 50 Years of the DELAWARE RIVER BASIN COMMISSION

ENVIRONMENTAL MILESTONES

2000: U.S. Congress designates the Schuylkill River National Heritage Area

2004: 50th anniversary of the U.S. Supreme Court Decree that apportioned the waters of the Delaware River



2000

The "Lower Delaware Wild and Scenic Rivers Act" and the "White Clay Creek Wild and Scenic Rivers System Act" are signed into law by President Bill Clinton. The White Clay Creek's designation marks the first time that virtually an entire watershed, not just a section of river, is added to the national system.

2003
Updated Schuylkill River recreation maps prepared by the DRBC in partnership with the Schuylkill River Greenway Association and Pennsylvania's Department of Conservation and Natural Resources are released for sale to the public.

2003
On behalf of New Jersey, Pennsylvania, and Delaware, and based on work conducted by the DRBC, U.S. EPA establishes total maximum daily loads (TMDLs or "pollution budgets") for the tidal Delaware River from Trenton downstream to the head of the Delaware Bay near Liston Point, Del. to address the presence of PCBs.

2003
The Christina Basin Clean Water Partnership, of which the DRBC is a member, is one of only 20 community-based groups (out of 176 applications) selected to receive \$1 million from a national program to support efforts to preserve and protect this interstate subbasin of the Delaware River.



2004

Elected and environmental leaders from the basin states and the federal government, along with other interested watershed stakeholders, meet in Wilmington to celebrate the completion of the Water Resources Plan for the Delaware River Basin ("basin plan"). The event also includes a ceremonial signing of a resolution supporting the plan's implementation. The plan is a 30-year, goal-based framework that will serve as a guide for all governmental and non-governmental stakeholders whose actions affect water resources in the basin.

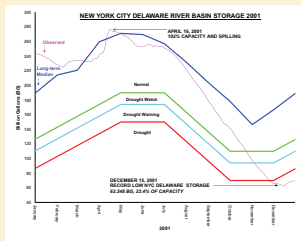
DRBC MILESTONES

2000



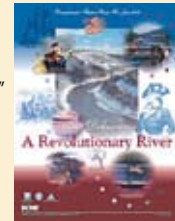
2001

The DRBC declares a basinwide drought emergency for only the third time since 1980. By December 15, the combined storage in the three New York City-Delaware Basin reservoirs drops to a record-low level of 63.348 billion gallons, or 23.4% of capacity. This emergency will remain in effect until November 2002.



2002

Pennsylvania recognizes the Delaware as its "Feature River of the Year" and creates an attractive poster with the help of DRBC staff using the theme, "The Delaware: A Revolutionary River."



2005

2005

The DRBC unanimously adopts a rule to establish pollutant minimization plan (PMP) requirements for point (end-of-pipe) and non-point (runoff) discharges of PCBs in the Delaware Estuary. This innovative approach embodies the principle of adaptive management, which encourages experimentation, measurement, and readjustment depending on the results of the actions taken. The commissioners set a goal of reducing PCB loadings by 50% in five years.

HYDROLOGIC MILESTONES

2001

2002

2004

2005



American patriotism was unfurled on the Delaware River shortly after the Sept. 11, 2001 terrorist attacks against the United States. The rowboat displaying the flag appeared one morning at the spot where George Washington and his Continental Army crossed the ice-choked river on Christmas night in 1776, en route to a decisive victory over the British Crown.



Delaware Gov. Ruth Ann Minner addresses elected and environmental leaders along with other interested watershed stakeholders at an event held in Wilmington on Sept. 13, 2004 to celebrate the completion of the "basin plan." Joining her (from left to right) are Brig. Gen. Merdith Temple (DRBC's federal representative), Bradley Campbell (New Jersey's alternate commissioner), Lt. Gov. Catherine Baker Knoll (Pennsylvania), and Fred Nuffer (New York's alternate commissioner). (Photo courtesy of the U.S. Army Corps of Engineers)

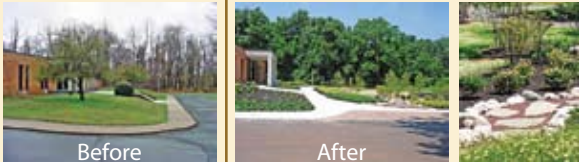
2007: Bald eagle's population recovery allows it to be removed from the federal list of endangered and threatened wildlife

2011: While the National Wild & Scenic Rivers System protects less than one-quarter of one percent of all U.S. rivers, 75 percent of the non-tidal Delaware is now included



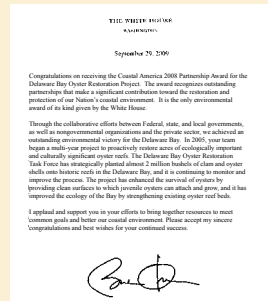
2007
The Delaware River Basin Interstate Flood Mitigation Task Force forwards to the four governors its action agenda with 45 recommendations for a more proactive, sustainable, and systematic approach to flood damage reduction. The formation of the task force was requested by the governors in September 2006 following three major main stem floods that took place between September 2004 and June 2006.

2007
The first phase of a demonstration project is completed at the DRBC headquarters property to show how an older site can be retrofitted to properly handle stormwater.



2009
Building upon its previous water conservation program accomplishments, the DRBC implements an updated water audit approach to identify and control water loss. Commission staff and its Water Management Advisory Committee help to develop the software being used here and nationwide to implement the new methodology.

2009
The Delaware Bay Oyster Restoration Project, an ongoing effort by DRBC and its task force partners to revitalize Eastern oysters in the bay, receives the Coastal America Partnership Award given by the White House.



2011
The DRBC celebrates its 50th anniversary.

2011
The Delaware River is selected over five other finalists in an online voting contest to be designated as Pennsylvania's "River of the Year."



2010



2006
The Musconetcong Wild and Scenic Rivers Act is signed into law by President George W. Bush adding yet another stretch of a Delaware River tributary to the National Wild and Scenic Rivers System.

2006
On behalf of Delaware and New Jersey, and based on work conducted by the DRBC, U.S. EPA establishes a TMDL for PCBs in the Delaware Bay. It is built upon the TMDLs developed in 2003 for the 85-mile tidal section of the Delaware River.

2008
The DRBC issues the first State of the Basin Report, which serves as a benchmark of current conditions and provides a platform for measuring and reporting future progress.

2008
The DRBC expands coverage of its SPW regulations by permanently adding the 76-mile-long stretch of the Lower Delaware. SPW designation now includes the entire non-tidal Delaware River from Hancock, N.Y. south to Trenton.



2010
The DRBC announces that it will postpone consideration of natural gas well pad applications until regulations are adopted. Draft natural gas development regulations are published in December for public review. Approximately 69,000 submissions commenting on the draft rules will be received by the end of the public comment period four months later.

2010
The third DRBC Federal Coordination Summit is held in October bringing together participants from 20 different federal, state, and other agencies to foster relationships and share information. Similar summits were held in 2006 and 2008.

2010
The DRBC updates water quality criteria for human health and aquatic life for toxic pollutants in the Delaware Estuary and extends the criteria to include the bay.



2006

2010

2011



Pennsylvania Gov. Ed Rendell (right) and Assistant Secretary of the Army (Civil Works) John Paul Woodley, Jr. at the May 15, 2008 DRBC Federal Coordination Summit in Philadelphia. (Photo courtesy of Khaalid Walls/U.S. Army Corps of Engineers)



2011: A Year of Celebrations

The Delaware: Pennsylvania's River Of The Year

The Delaware River was selected over five other finalists in an online voting contest to be named Pennsylvania's 2011 River of the Year.

The process that led to the Delaware's designation in January 2011 began several months earlier when the state's Department of Conservation and Natural Resources (DCNR) and the Pennsylvania Organization for Watersheds and Rivers (POWR) invited nominations of worthy candidates. Several groups nominated the Delaware and decided to partner on this effort.

There are two requirements for the organizers of the selected River of the

Year: host a river sojourn as well as a series of events to celebrate the river and its community connections.

A steering committee, chaired by DRBC's Kate O'Hara, began meeting in January to coordinate events throughout the basin to celebrate this distinction. Whether it was an environmental festival, hiking along a canal, a stream clean-up, speakers' series, or a paddling excursion, the public was invited to participate and share their experiences on and along the river.

DCNR provided grant money to help support these activities and also funded the printing of commemorative River of the Year posters. The posters, printed as a four-part series, each featured an image from a section of the main stem Delaware: the upper, middle, and lower non-tidal river, as well as the tidewaters, or estuary. Area photographers and a local artist generously donated photos and artwork to grace the posters. A photograph by David B. Soete highlighting the Upper Delaware Scenic and Recreational River at Point Mountain in Hancock, N.Y. represented the upper Delaware region. The poster for the middle Delaware, which flows through the Delaware Water Gap National Recreation Area, featured a photograph titled "Early Morning at Dingmans Campground" by Andy Smith. Artist Todd Stone provided a painting titled "From the Palisades II" for the lower non-tidal Delaware poster. The tidal Delaware poster's photo, "Paddling into Philadelphia," was a second contribution by Andy Smith and showcased the city's skyline.

Several Pennsylvania state legislators whose districts are located in the basin

helped distribute the free posters: Representatives Tina Davis (Bucks-141), Gary Day (Berks/Lehigh-187), Joe Emrick (Northampton-137), Robert Godshall (Montgomery-53), Kate Harper (Montgomery-61), Thomas Murt (Montgomery/Philadelphia-152), and Marguerite Quinn (Bucks-143).

Since 1983, DCNR and POWR have annually chosen a Commonwealth river to be honored as "River of the Year" to help raise awareness about the importance of rivers, their conservation needs, and their recreational and economic impact on communities. Additional information can be viewed at www.riveroftheyear.com.

17th Annual Delaware River Sojourn

From June 18-25, about 60 daily participants enjoyed the Delaware River Sojourn, an event offered annually since 1995 that combines canoeing/kayaking, camping, educational programming, and historical interpretation. This year's theme was "River of Life" in honor of the vast variety of life that the river sustains and the Pennsylvania River of the Year distinction.

In addition to paddling through the wilds of the Upper Delaware, the scenic Delaware Water Gap, and the river's "fall-line," or the transition from the non-tidal portion to its tidewaters, sojourners also experienced the

Vicki Dodson, a graphic designer and sojourn participant, created the logos for River of the Year and the sojourn in 2011.



Artist Todd Stone's "From the Palisades II" was the featured painting on the lower non-tidal Delaware River commemorative poster.



The commemorative poster of the Upper Delaware River featured a photograph provided by David B. Soete taken at Point Mountain in Hancock, N.Y., just below where the East and West Branches of the Delaware meet.



Brig. Gen. Peter DeLuca, the DRBC's federal member, tries on the "Lord High Admiral" hat presented to him by Rich Egan, 2011 Sojourn steering committee co-chair. (Photo taken by Cie Stroud and provided courtesy of the Delaware River Joint Toll Bridge Commission)

Lackawaxen River, a Delaware tributary that was named Pennsylvania's River of the Year in 2010. All along the way, paddlers learned about the Delaware River's ecology and ties to local communities, as well as how to become stewards of this great resource for the enjoyment of future generations.

DRBC's Kate O'Hara co-chaired the sojourn steering committee for the

third consecutive year and was joined in 2011 by Richard Egan, a volunteer with the National Park Service-Upper Delaware Scenic and Recreational River. DRBC's federal member, Brigadier General Peter DeLuca, paddled with the group on June 23 as the day's "Lord High Admiral," an honor bestowed on individuals working to protect and enhance the river.

Detailed information about this annual June event can be found at www.delawariversojourn.org.

"Delaware River Celebration"

The DRBC, along with the Pocono Mountains Visitors Bureau, the 2011 River of the Year steering committee, and The Shawnee Inn and Golf Resort, hosted the "Delaware River Celebration" on October 19.

Situated along the banks of the "Wild and Scenic" Delaware River

Additional information about the Delaware River Celebration, including a photo gallery and the afternoon panelists' presentations, can be viewed on the DRBC web site at www.nj.gov/drbc/basin/photo/del_riv_celebration.html.

in the Delaware Water Gap National Recreation Area, the Shawnee Inn was the ideal location for this event. Over 100 people from government agencies, non-profit organizations, and the private sector participated in the day's activities, which were held to honor the Delaware—Pennsylvania's 2011 River of the Year—as well as DRBC's 50th and the Inn's 100th anniversary milestones.

The afternoon featured an informational forum, split into two panel discussions: one focused on

The Pennsylvania River of the Year activities and the 2011 Delaware River Sojourn were organized and supported by a steering committee partnership of individual volunteers, agencies, and organizations that included the following:

Thank
You!

AMERICAN CANOE ASSOCIATION • DELAWARE AND RARITAN CANAL STATE PARK • DELAWARE CANAL STATE PARK • DELAWARE RIVER BASIN COMMISSION • FRIENDS OF THE DELAWARE WATER GAP NATIONAL RECREATION AREA • MONROE COUNTY TRANSIT AUTHORITY • NATIONAL CANOE SAFETY PATROL • NATIONAL PARK SERVICE - DELAWARE WATER GAP NATIONAL RECREATION AREA • NATIONAL PARK SERVICE - UPPER DELAWARE SCENIC AND RECREATIONAL RIVER • NORTHEAST WILDERNESS EXPERIENCE • NURTURE NATURE CENTER/NURTURE NATURE FOUNDATION • PENNSYLVANIA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES • PENNSYLVANIA ENVIRONMENTAL COUNCIL • PENNSYLVANIA ORGANIZATION FOR WATERSHEDS AND RIVERS • PIKE COUNTY CONSERVATION DISTRICT • POCONO ENVIRONMENTAL EDUCATION CENTER • POCONO MOUNTAINS VISITORS BUREAU • PPL CORPORATION - LAKE WALLENPAUPACK • SILVER LAKE NATURE CENTER • THE LACKAWAXEN RIVER CONSERVANCY • THE SHAWNEE INN AND GOLF RESORT • TIDEWATERS GATEWAY PARTNERSHIP, INC. • UPPER DELAWARE COUNCIL • UPPER DELAWARE PRESERVATION COALITION • WAYNE CONSERVATION DISTRICT

river basin commissions and water management and one on river-based recreation.

The river basin commission panel was moderated by Dr. Jeffrey Featherstone, Director of the Center for Sustainable Communities at Temple University. Panelists were Robert (Bo) Abrams, Esq., Florida A&M University College of Law; Alexandria Dapolito Dunn, Esq., Executive Director and General Counsel, Association of Clean Water Administrators; and Dr. Delli Priscoli, Senior Advisor, U.S. Army Corps of Engineers.

The river-based recreation panel was moderated by Carl Wilgus, President and CEO of the Pocono Mountains Visitors Bureau. Panelists were Jerry Kauffman, Project Director, Water Resources Agency - University of Delaware; John Donahue, Superintendent, National Park Service - Delaware Water Gap National

Recreation Area; Celeste Tracy, Board Member and Coordinator for Land and Water Trail Projects, Delaware River Greenway Partnership; and Charlene Trotter, Executive Director, Tri-State Chamber of Commerce.

Following the afternoon discussions, attendees mingled and participated in a raffle/auction of various locally donated items, with all proceeds benefiting the Delaware River Sojourn.

The day culminated with dinner and included remarks from Lt. Col. Philip M. Secrist III, the alternate federal commissioner and DRBC chair, and Executive Director Carol R. Collier. "It is because of the cooperative effort of all of the groups represented here today towards the goal of a cleaner,



Panelists field questions from the audience during the "River Basin Commissions – Why Do We Need Them?" informational session on Oct. 19, 2011. (Photo by David B. Soete)

healthier river system that the Delaware is Pennsylvania's 2011 River of the Year," Collier observed. "It is fitting that this is also DRBC's 50th anniversary, a time to celebrate all that has been accomplished and look ahead to the future."

The Delaware River: One of "America's Great Waters"

America's Great Waters Coalition designated the Delaware River as one of nine new Great Waters on World Water Day, March 22.

The other eight bodies of water added to the Great Waters list in 2011 are the Albemarle Pamlico Sound, Colorado River, Galveston Bay, Missouri River, Narragansett Bay, New York/New Jersey Harbor, Ohio River, and the Rio Grande. Previously designated Great Waters included the Chesapeake Bay, Coastal Louisiana, Everglades, Great Lakes, Gulf of Maine, Lake Champlain, Long Island Sound, Mississippi River, Puget Sound, and San Francisco Bay.

"We cannot afford not to protect our Great Waters," said Theresa Pierno, co-chair for the America's Great Waters Coalition and executive vice president for the National Parks Conservation Association. "The health of our Great Waters is directly linked to America's economic recovery and the creation of jobs. Millions of jobs are dependent on our Great Waters and contribute trillions to our nation's economy."

America's Great Waters Coalition is an alliance of national, regional, state, and local organizations working to protect, preserve, and restore our nation's Great Waters.

To learn more about the Great Waters Coalition, and to view a map of America's Great Waters, please visit www.nwf.org/greatwaters.

Signatory Members

UNITED STATES



Brigadier General
Peter A. DeLuca



Lieutenant Colonel
Philip M. Secrist III

The ex officio members of the Delaware River Basin Commission include the four basin state governors and the Division Engineer (commonly referred to as the Commander) of the U.S. Army Corps of Engineers North Atlantic Division who serves as the federal representative.

PENNSYLVANIA



Governor Tom Corbett



DEP Secretary
Michael L. Krancer

The five members appoint alternate commissioners, with the governors selecting high-ranking officials from their state environmental agencies. Each commissioner has one vote of equal weight with a majority vote needed to decide most issues. Exceptions are votes on the commission's annual budget and drought declarations, which require unanimity.

NEW JERSEY



Governor Chris Christie



DEP Commissioner
Bob Martin

Federal Government

Brigadier General Peter A. ("Duke") DeLuca, the DRBC federal representative since April 2009, relinquished his position as commander of the Army Corps of Engineers North Atlantic Division to **Colonel Christopher J. Larsen** on September 9. Brig. Gen. DeLuca's new assignment will be commandant of the U.S. Army Engineer School in Missouri. **Lieutenant Colonel Philip M. Secrist III** (Philadelphia District Engineer) and North Atlantic Division Director of Programs **David J. Leach** continued to serve as alternate and second alternate, respectively, during 2011.

NEW YORK



Governor Andrew M. Cuomo



DEC Commissioner
Joseph Martens

Secretary **Michael L. Krancer** as his alternate, Executive Deputy Secretary for Programs **John T. Hines** as second alternate, Deputy Secretary for Water Management **Kelly Heffner** as third alternate, and **Charles Kirkwood** as fourth alternate.

New Jersey

The appointees named by **Governor Chris Christie** to represent him on the commission in 2011 remained DEP Commissioner **Bob Martin** (alternate), Assistant Commissioner for Water Resource Management **John Plonski** (second alternate), Division of Water Quality Director **Michele M. Putnam** (third alternate), Division of Water Supply Director **Fred Sickels** (fourth alternate), and Research Scientist **Dr. Joseph A. Miri** (fifth alternate).

New York

Governor Andrew M. Cuomo was inaugurated in January 2011, succeeding **David A. Paterson** who had served since 2008. Governor Cuomo selected Department of Environmental Conservation (DEC) Commissioner **Joseph Martens** as his alternate, Division of Water Director **Mark Klotz** as second alternate, Division of Water Assistant Director **Tom Cullen** as third alternate, and Bureau of Water Resource Management Director **Angus Eaton** as fourth alternate.

In August 2011, **Carter H. Strickland, Jr.** was named New York City DEP Commissioner and advisor to the New York State DRBC commissioner, replacing **Caswell F. Holloway** who became the city's Deputy Mayor for Operations earlier in the month.

DELAWARE



Governor Jack A. Markell



DNREC Secretary
Collin P. O'Mara

Pennsylvania

Governor Tom Corbett replaced **Edward G. Rendell**, who held the elected post for eight years. The new governor appointed Department of Environmental Protection (DEP)

Delaware

Governor Jack A. Markell continued to designate Department of Natural Resources and Environmental Control (DNREC) Secretary **Collin P. O'Mara** as his alternate in 2011. Water Resources Division Director **Dr. Katherine E. Bunting-Howarth** (second alternate) left her state position in March to work for the New York Sea Grant Program at Cornell University in Ithaca. Governor Markell appointed

Division of Water Director **Kathleen M. Stiller** as his new second alternate in May 2011.

Commission Officers

The Delaware River Basin Compact requires the annual election of a chair and vice chairs, which historically has been based upon rotation of the five signatory parties. The following members served as officers during calendar year 2011:

The current list of commission members and their alternates can be viewed at www.nj.gov/drbc/about/commissioners/.

*January 1, 2011 through June 30, 2011
(one-year term began July 1, 2010)*

Chair: Governor Markell (Delaware)

Vice Chair: Brigadier General DeLuca (Federal Representative)

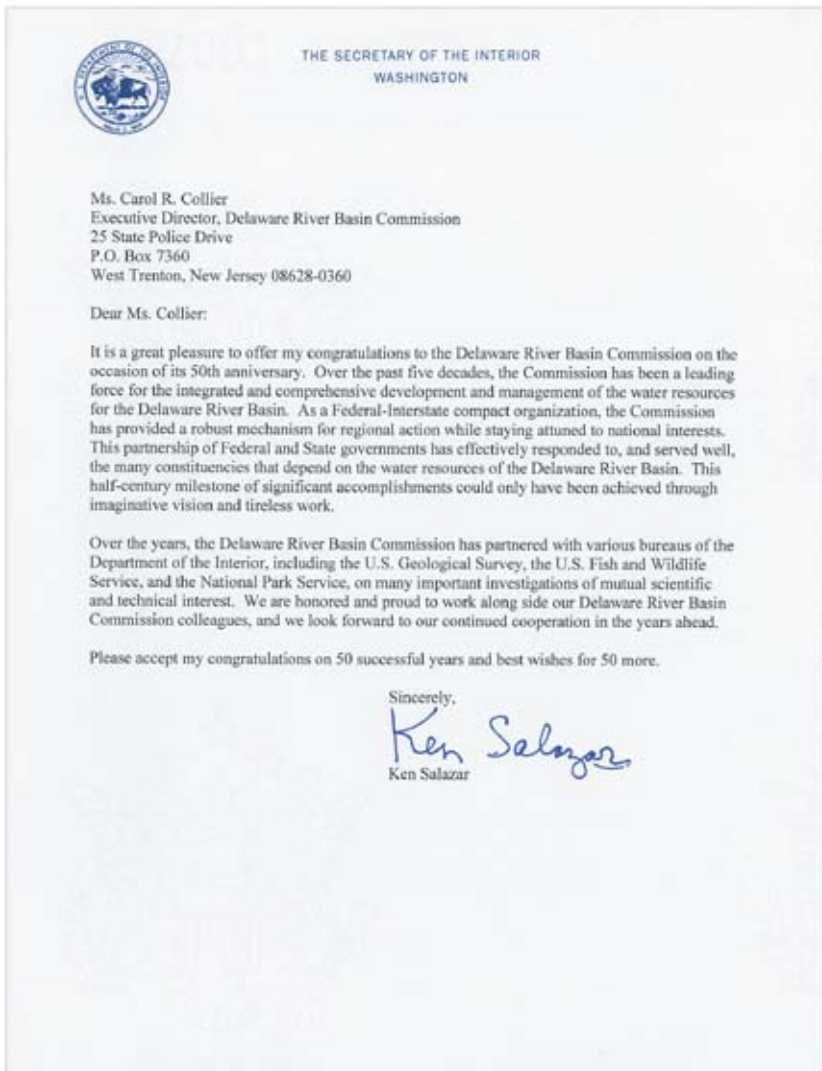
Second Vice Chair: Governor Corbett (Pennsylvania)

*July 1, 2011 through December 31, 2011
(one-year term to end June 30, 2012)*

Chair: Brigadier General DeLuca/
Colonel Larsen (Federal Representative)

Vice Chair: Governor Corbett
(Pennsylvania)

Second Vice Chair: Governor Christie (New Jersey)



Left: Letter from Secretary of the Interior Ken Salazar congratulating the DRBC on its 50th anniversary.

Below: Commissioner Katherine Bunting-Howarth (Del., chair) holds the cake presented at her last DRBC meeting on March 2, 2011. Pictured here with her (from left to right) are Commissioner Joe Miri (N.J.), Commissioner John Plonski (N.J.), Commissioner John Hines (Pa.), Commissioner Mark Klotz (N.Y.), Executive Director Carol Collier, and Commissioner Peter DeLuca (U.S.). (Photo by Katharine O'Hara)



Commission Staff

New Employees

- **Robert Damiani** – Geologist/ Hydrologist; Water Resources Management Branch.
- **Kenneth Stoller** – Project Review Section Supervisor; Water Resources Management Branch.

Resignation

- **Feng Shi, Ph.D.** – Water Resources Engineer/Modeler; Modeling, Monitoring and Assessment Branch. After three years of service with the DRBC, Feng returned to China. His new position is with the Policy and Regulation Branch in the Environmental Protection Department of Hebei Province.

Reorganization

- **Chad Pindar** – Watershed Planning and Compliance Section Supervisor; Planning and Information Technology Branch. This transfer became effective upon the hiring of Ken Stoller, who filled Chad's previous position.

Other Staff Notes

- Executive Director **Carol R. Collier** was elected in August to be the next president of the American Water Resources Association (AWRA). Founded in 1964, AWRA is a non-profit professional association dedicated to the advancement of men and women in water resources management, research, and education. For more information about this organization, visit www.awra.org.
- Watershed Scientist **Robert Limbeck** (Modeling, Monitoring and

Assessment Branch) was recognized in 2011 for attaining 25 years of employment with the commission. Bob is currently the longest serving member on the DRBC staff.

- Information Technology and Water Use Section Supervisor **David Sayers** (Planning and Information Technology Branch) received two awards from the American Water Works Association (AWWA) in honor of his accomplishments in the area of water conservation, specifically water loss control. A *Special Recognition for Outstanding Service* was presented to David in June 2011 "For his work and dedication in the development and implementation of water auditing methods for drinking water suppliers." This was followed in September with a *Peak Performance Award* in recognition of David's "initiative, creativity and dedication through his work on the Water Loss Control Committee." AWWA, founded in 1881, is an international non-profit educational association dedicated to safe water. Additional information can be found on its web site at www.awwa.org. (*Editor's Note: Information about a Water System Audits and Water Loss Control Workshop held in April 2011 appears on page 30.*)
- The Partnership for the Delaware Estuary (PDE) hosted the biennial *Delaware Estuary Science and Environmental Summit* in Cape May, N.J. Over 250 people attended the three-day meeting in early 2011 to learn from presentations that focused on the theme, "Connections - Land to Sea, Shore to Shore & Science

The current list of DRBC staff members, including their phone number extensions and e-mail addresses, can be viewed at www.nj.gov/drbc/about/staff/.

to Outreach." Executive Director **Carol R. Collier** participated in a panel discussion on "Energy in the Delaware Estuary." DRBC staff who gave oral presentations included **Ronald MacGillivray, Ph.D.** ("Emerging Contaminants in the Delaware Estuary") as well as **Gregory Cavallo** and **Thomas Fikslin, Ph.D.** ("Evaluation of PCB and Dioxin/Furan Concentrations in Sediment Samples from the Delaware Estuary"). Poster presenters from DRBC included **Jessica Rittler Sanchez, Ph.D.** and **Karen Reavy** ("Land Use Changes in the Delaware River Basin," with two other authors), **John Yagecic** ("Assessment of Water Quality Indicators for the State of the Estuary/State of the Basin Reports"), and **Robert Limbeck** ("Delaware Estuary Non-Tidal Living Resources: Status and Trends," with three other authors). Complete information about the summit can be found on the PDE web site at www.delawareestuary.org/news_pde_science_conference.asp.

Annual Hydrologic Conditions Summary

2011 Highlighted Events

March Flooding

Heavy rain fell across the Delaware River Basin (DRB) March 6-7, boosting streamflows and saturating the ground. The tail end of the storm brought cold air and produced snow in the northern regions of the basin, suppressing rainfall and runoff amounts in these areas.

Shortly after the minor flooding throughout the basin from the first storm subsided, another system impacted the DRB on March 10-13. Conditions were favorable for a possible flood event: streamflows were high, the ground was saturated, and the upper basin snowpack had the potential

to melt and contribute to runoff. This second March storm produced heavy rain and runoff that resulted in widespread flooding along the Delaware River and its tributaries. Several points along the main stem Delaware from Tocks Island to Trenton, N.J. exceeded flood stage, with some locations experiencing moderate flooding. Along the Lehigh River, the Delaware's second largest tributary, major flood stage was reached at Glendon, Pa. while Walnutport, Pa. registered its third highest crest on record. Moderate flooding was experienced along the upper reaches of the Schuylkill River, the Delaware's largest tributary, at

Landingville, Pa. and Berne, Pa.

The March 10-13 storm produced 2.5 to 5.0 inches of rainfall along and north of Interstate 78 while 1.0 to 2.5 inches fell in other areas of the basin. Combined rainfall amounts from the two March events ranged from two inches in parts of Delaware and southern New Jersey to between seven and eight inches in some regions of the Poconos and northern New Jersey.

Summer Drought

Abnormally dry conditions developed in June and persisted through late August. Below-normal rainfall during this time resulted in declining

Figure 1

Precipitation Totals from Hurricane Irene

August 24, 2011 8:00 a.m. – August 29, 2011 8:00 a.m.

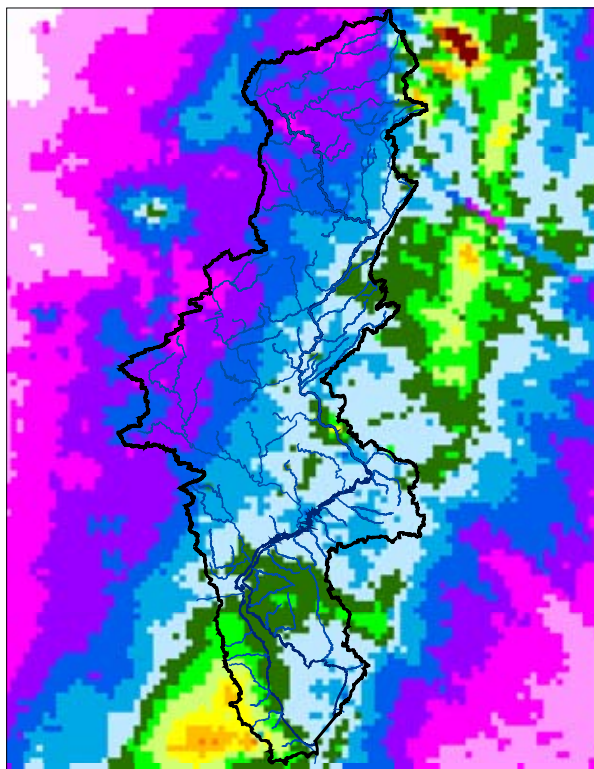
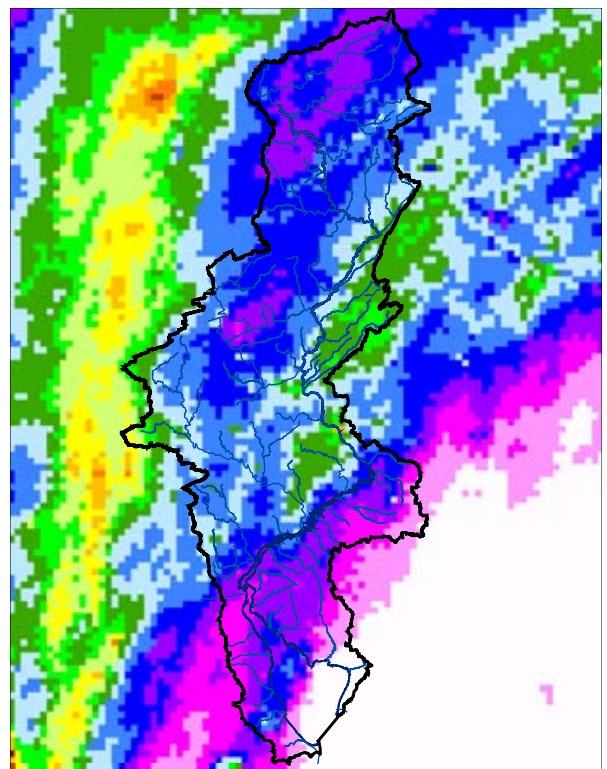
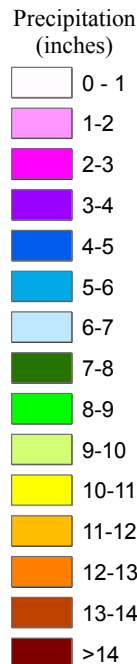


Figure 2

Precipitation Totals from Tropical Storm Lee

September 5, 2011 8:00 a.m. – September 9, 2011 8:00 a.m.



Provisional data provided by the Mid-Atlantic River Forecast Center.

streamflow and groundwater levels. On August 5, hydrologic conditions and rainfall deficits prompted Pennsylvania to declare a drought watch for nine of its counties in the basin (Berks, Bucks, Chester, Delaware, Lancaster, Lebanon, Montgomery, Philadelphia and Schuylkill) along with 31 other counties across the state.

The drought was brief, however, due to the excessive rainfall produced from Hurricane Irene at the end of August. The improved hydrologic conditions following Irene prompted Pennsylvania to lift its drought watch for the nine DRB counties on September 2.

Hurricane Irene and Tropical Storm Lee

On August 27-28, Hurricane Irene traveled up the East Coast and delivered widespread five to eight inches of rain, with locally higher amounts of up to 12 inches in the state of Delaware. Farther inland, the Pocono and Catskill regions received approximately three to five inches of rainfall (see figure 1). The total rainfall for August in Philadelphia was 19.31 inches, which broke the previous all-time monthly record of 13.07 inches for September 1999.

Tropical Storm Lee followed shortly thereafter on September 5-9. Approximately five to seven inches of precipitation fell over much of the basin, with lesser amounts of two to four inches recorded in the estuary region of the lower basin. Portions of the Schuylkill River Basin and western New Jersey received larger rainfall amounts of up to 10 inches (see figure 2).

Both storms produced widespread

flooding in the basin. Figures 3 and 4 on page 20 show the highest flood stage reached at various National Weather Service (NWS) forecast locations during Irene and Lee. A summary report with additional information can be found at www.nj.gov/drbc/hydrological/flood/recent/.

Hurricane Irene and Tropical Storm Lee impacted the operations of several upper and lower basin reservoirs. In advance of Irene on August 23, New York City began releasing water from its Neversink and Pepacton reservoirs in the upper basin to create extra storage to capture some storm runoff. On September 12 a few days after Lee hit, PPL opened the roller gates of its dam at Lake Wallenpaupack in the upper basin for the first time since June 2006 to allow for a controlled release of lake water that had risen to within two feet of the top of the gates. The spillway gates have only been used for such releases 10 times over the past 86 years of operation.

The U.S. Army Corps of Engineers (ACOE) made extra releases from three of its lower basin reservoirs several days prior to the two storm events to create additional storage to capture the expected high inflows. The F.E. Walter, Beltzville, and Blue Marsh reservoirs captured and stored the inflow produced by Hurricane Irene. During Tropical Storm Lee, which arrived soon after Irene, storage in the Beltzville and F.E. Walter reservoirs remained below their respective spillways. However, inflow to Blue Marsh Reservoir resulted in a spill for only the second time in its history. On September 8, the ACOE issued an emergency declaration after

More detailed information about the basin's hydrologic conditions can be found on the DRBC web site at www.nj.gov/drbc/hydrological.

the dam pool level reached the spillway and the gates were fully opened to allow the release of 5,400 cubic feet per second (cfs) of water to reduce the lake elevation. The dam reached a record elevation of 309.38 feet on September 9, surpassing the previous highest level of 309.19 feet in June 2006.

Coastal Flooding in the Tidal Delaware River

On September 29 and 30, several conditions occurred that produced moderate coastal flooding on portions of the tidal Delaware River in areas north of Philadelphia towards Trenton. Tides were already high in both the Delaware Bay and along the tidal Delaware River from a prevailing southerly wind and the September 27 new moon. At the same time, the tidal Delaware was receiving high flows generated from storms earlier in the week. Many residents and business owners in the impacted areas were not prepared for the sudden flooding. Some of the areas affected by flooding included Bristol Borough in Bucks County, Pa. and Delran Township in Burlington County, N.J.

Historic October Nor'easter

The DRB was impacted by a Nor'easter on October 29 that produced heavy rain and strong winds along with

sleet and a rare pre-Halloween snow. In many locations, the storm began as rain, which turned to sleet and snow as temperatures dropped. Historic October snow accumulations occurred throughout eastern Pennsylvania as well as in northern and western New Jersey. As much as 16 inches of snow fell across the Poconos, Lehigh Valley, and Berks

County in Pennsylvania and into the mountains of northwest New Jersey. Northcentral New Jersey also received up to a foot of snow.

The storm produced mixed precipitation in the lower Delaware Valley, where lesser snow totals of one to three inches were recorded. Sleet extended as far south as northern

Delaware. Moderate to heavy rain fell in central and southern Delaware. Strong winds accompanied the storm, with speeds ranging from 15 to 25 mph and gusting to 35 mph. Gale force winds and minor coastal flooding were reported along coastal locations in New Jersey and Delaware. The storm caused extensive power outages throughout the

Figure 3
Highest Flood Stage Reached During Hurricane Irene

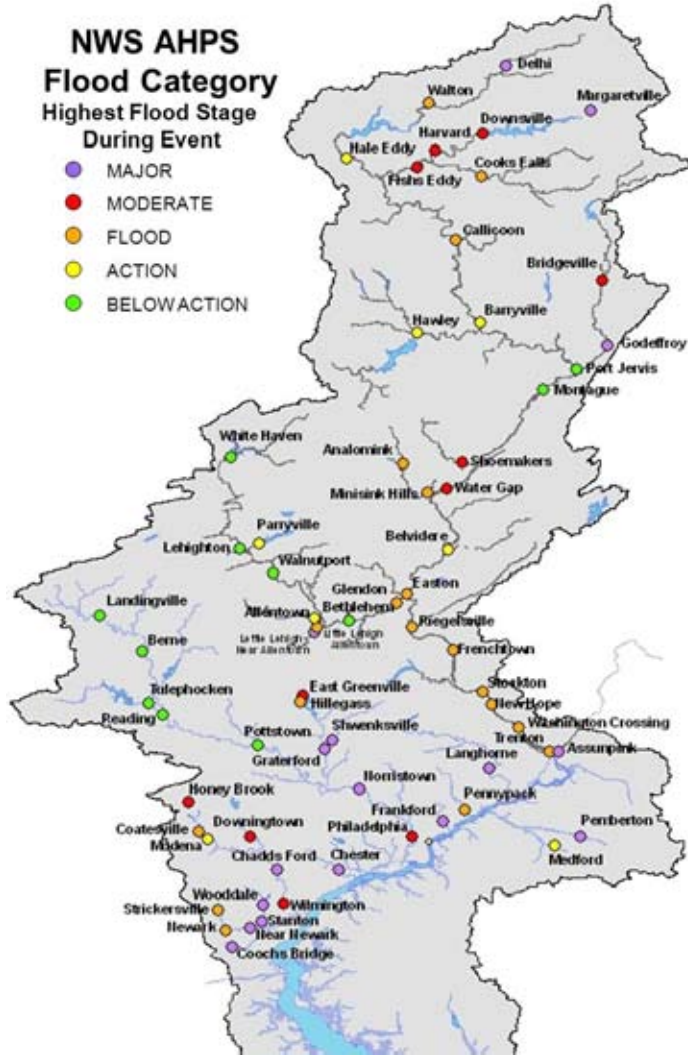
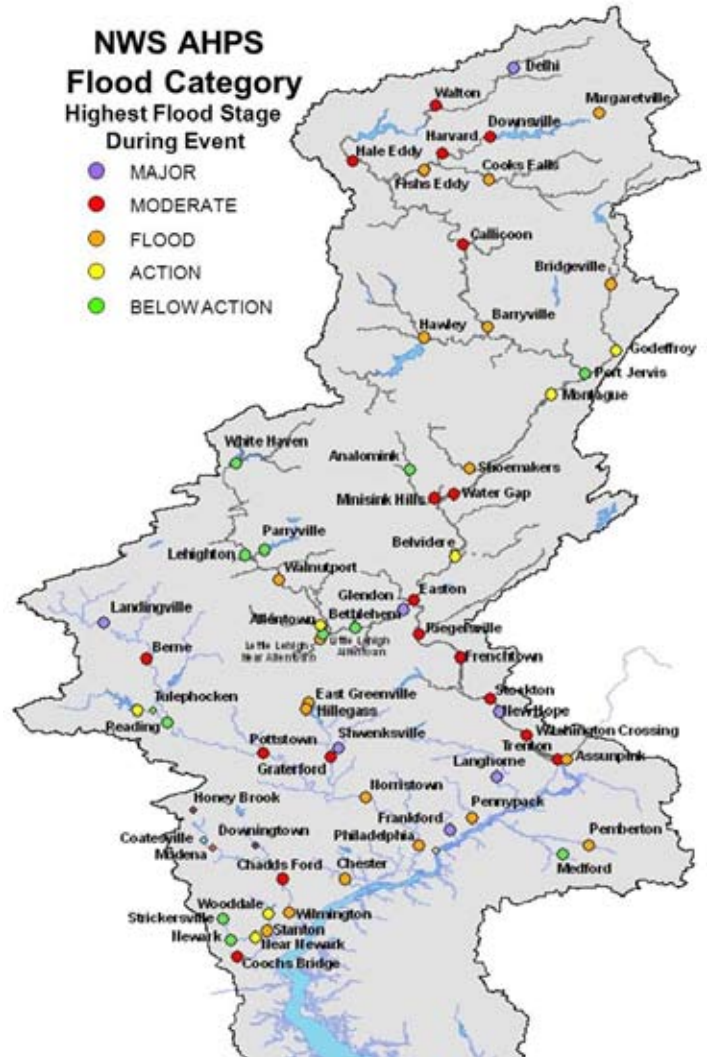


Figure 4
Highest Flood Stage Reached During Tropical Storm Lee



Displayed flood stages represent the maximum stage achieved for each event. The graphics do not represent the flood stage for an instant in time because not all peaks occur at the same time. Graphics prepared by DRBC staff. The highest flood stages are provisional and subject to revision. AHPS=Advanced Hydrologic Prediction Service.

DRB as well as substantial travel delays due to slippery roads and canceled flights.

Precipitation

Basin counties on average received 150% of their normal precipitation during 2011. Much of this surplus resulted from Hurricane Irene and Tropical Storm Lee. August 2011 was the wettest August on record for Philadelphia based on data collected since 1872. Annual precipitation totals ranged from 42.4 inches in Sussex County, Del. to 81.6 inches in Warren County, N.J. Annual precipitation departures from normal ranged from 1.8 inches below normal in Sussex County, Del. to 36.8 inches above normal in Warren County, N.J. Sussex County, Del. was the only reported county within the DRB that did not end the year with above-normal precipitation.

The observed annual precipitation above Montague, N.J. was 70.39 inches, or 27.13 inches above normal. Similarly, observed 2011 precipitation above Trenton was 71.60 inches, or 26.71 inches above normal. Precipitation in Wilmington, Del. was 56.58 inches, or 13.77 inches above normal.

Streamflow

Monthly mean streamflow observations at select stations along the Lehigh, Schuylkill, and Delaware rivers were below normal during January and February 2011. Streamflows recovered after early March storms produced heavy rain, melted snowpack, and caused flooding at numerous basin locations.

The flow observations at these

locations generally remained normal to above normal throughout the summer months. However, in the Schuylkill River Basin where drought conditions were more prevalent, below-normal streamflows were recorded along the Schuylkill during July.

Tropical storm activity during August and September produced the highest monthly mean streamflow observations of the year. The Delaware River at Montague and Trenton averaged five times the normal August flow and more than ten times the normal September flow. Streamflows at the select stations remained above their normal monthly flows for the remainder of 2011.

Groundwater

The average monthly groundwater level in eight reported U.S. Geological Survey (USGS) observation wells in the Pennsylvania portion of the basin were below the long-term average during January and February 2011, still recovering from dry conditions during 2010. Recharged by rainfall and snowmelt, the groundwater level at these wells recovered to above the long-term average by March. Groundwater levels trended downward during the spring and summer months, dipping sharply during drier periods in May through late August, but the arrival of Hurricane Irene in late August boosted levels to much above average by September. The water level for the eight wells remained much above the long-term average through the end of 2011.

The groundwater level in the New Castle County, Del. coastal plain well began the year within the lower half (25- to 50-percentile) of the normal

range. It stayed within the normal range until rain from Hurricane Irene and Tropical Storm Lee recharged the well. Beginning an upward trend in August, groundwater was above the normal range by October, where it remained for the rest of the year.

The groundwater level in the Cumberland County, N.J. coastal plain well began the year within the normal range. Runoff from Irene and Lee caused the groundwater level to rise above the normal range in September, where it remained through the end of the year.

Lower Basin Reservoir Storage

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 2011. Consequently, the DRBC's lower basin drought operating plan was not implemented. As a result, DRBC did not have to direct releases from lower basin storage during the year to meet the Delaware River flow objective of 3,000 cfs at Trenton.

No releases were made from Merrill Creek Reservoir in 2011. Storage in this reservoir, located near Phillipsburg, N.J., is used to replace evaporative losses (consumptive use) caused by power generation when the basin is under DRBC-declared drought operations and the equivalent average daily flow target for the Delaware River at Trenton is below 3,000 cfs.

Upper Basin Reservoir Storage

Three New York City (NYC)

reservoirs—Cannonsville, Pepacton, and Neversink—are located on headwater tributaries feeding the main stem Delaware River. Combined storage in the three NYC Delaware Basin reservoirs did not fall below the drought watch level during 2011; consequently, DRBC's basinwide drought operating plan was not implemented.

On January 1, 2011, the combined storage at the three NYC reservoirs

was 239 billion gallons (bg), which is 88% usable capacity and 50 bg above the long-term median for that date. Combined storage remained above the long-term median except for the two brief periods when it was below the median in February and March. Early March storms produced heavy rainfall and runoff that, in combination with melting snowpack, refilled the reservoirs by the second week in March. The

normal refill date for the NYC reservoirs is May 1. Combined storage stayed above the long-term median for the remainder of the year.

The Office of the Delaware River Master directed releases from the NYC reservoirs totaling approximately 0.85 bg from July 24-28. Such releases are directed as necessary to meet the normal flow objective of 1,750 cfs for the Delaware River at Montague as

Diversions and releases of water from the three NYC-Delaware Basin reservoirs are jointly managed by Delaware, New Jersey, New York, Pennsylvania, and NYC under the terms of a 1954 U.S. Supreme Court Decree that settled an interstate water dispute. In 2011, the five decree parties (four states and NYC) unanimously reached an agreement for a new interim flow program intended to meet water supply demands, protect fisheries habitat downstream of the NYC-Delaware Basin reservoirs, enhance flood mitigation, and repel the upstream movement of salt water in the Delaware Estuary.

The new agreement, in effect June 1, 2011 through May 31, 2012, utilized the city's new Operations Support Tool (OST), a sophisticated monitoring and modeling system that enabled the decree parties to manage the movement of water throughout the reservoir system and the basin. This new tool allows better prediction of reservoir-specific water storage levels, quality, and inflows, which guides selection of releases from the three reservoirs to the Delaware River. Release rates in the agreement are patterned after recommendations provided in a January 2010 joint fisheries paper from the New York State Department of Environmental Conservation and the Pennsylvania Fish and Boat Commission. It is the intention of this program to create voids in the reservoirs at key times of the year to help mitigate river flooding during periods of high inflows and heavy snow melt.

The new, one-year operating plan updated the decree parties' Flexible Flow Management Program (FFMP) in place since 2007. The intention of the original FFMP, which expired on May 31, 2011, was to provide a more adaptive means for managing releases from the three NYC reservoirs by providing for releases based solely on the time of year and reservoir storage conditions. The decree parties will evaluate the interim reservoir management plan over the next year and use the experience to help guide the development of future agreements.

The agreement can be viewed on the web site of the Office of the Delaware River Master, which administers the provisions of the 1954 decree, at water.usgs.gov/osw/odrm/.

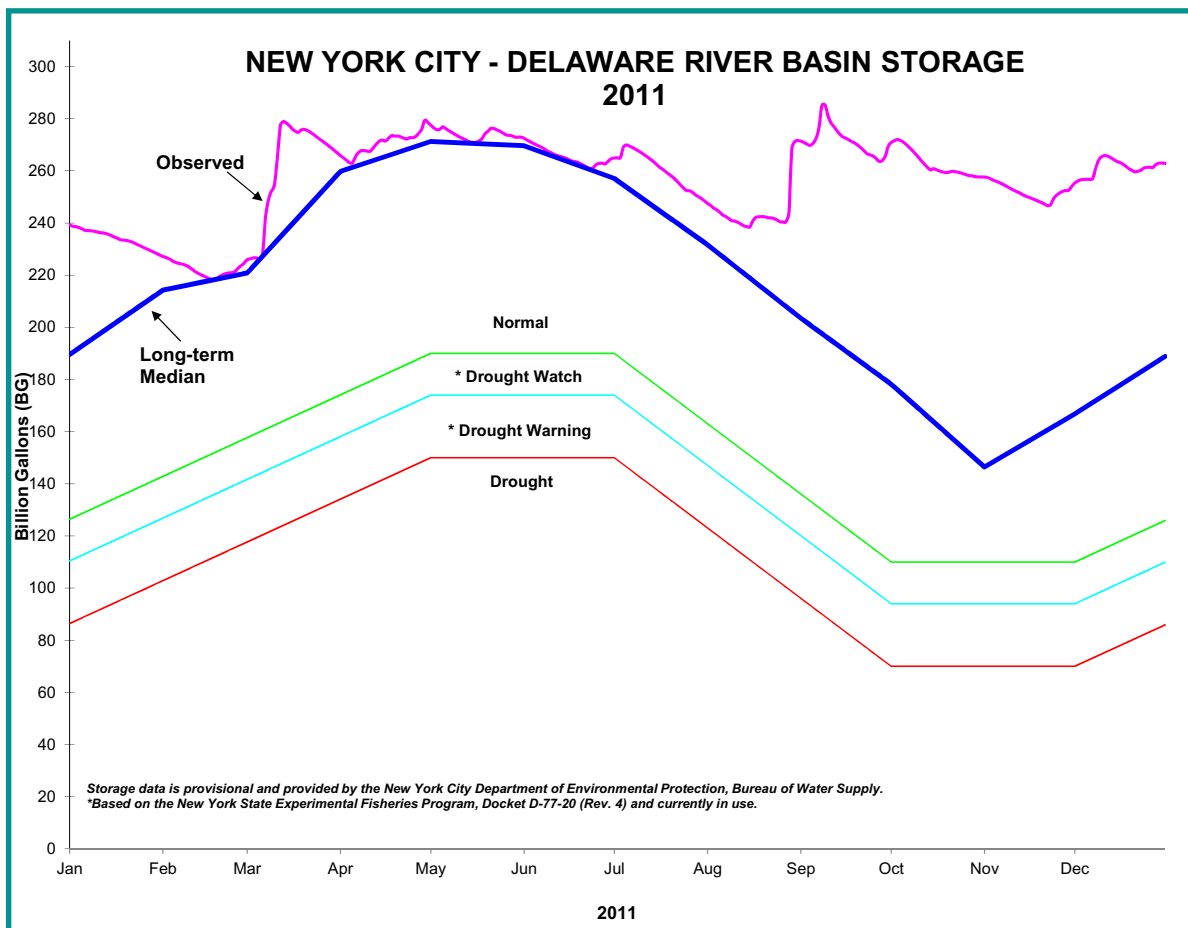
required by the 1954 U.S. Supreme Court Decree. By comparison, directed releases totaled 43.7 bg in 2010 and 101 bg during the drought year 2001.

Salt Front

The salt front or salt line is defined as the 250 parts-per-million (or milligram-per-liter) chloride concentration. The seven-day average location of the salt front is used by DRBC as an indicator of salinity intrusion in the Delaware Estuary. The salt front's location fluctuates along the main stem Delaware River as streamflow increases or decreases in response to changing

inflows, diluting or concentrating chlorides in the river. Average mid-month locations throughout the year normally range from river mile (RM) 61 in mid-April (0.5 miles below Pea Patch Island, Del.) to RM 81 in mid-October (Marcus Hook, Pa).

During 2011, the farthest upstream location of the salt front was the Delaware-Pennsylvania state line at RM 78. In comparison, the salt front reached RM 102 (two miles upstream of the Benjamin Franklin Bridge) during the 1960's drought of record.



This graph shows the observed combined water storage in the NYC-Delaware Basin reservoirs (Cannonsville, Pepacton, and Neversink) during 2011, as well as the long-term median and drought rating curves. The period of record represented by the long-term median values is June 1967 to November 1998.

Spotlight on Natural Gas Rulemaking Continues

DRBC Receives 69,000 Comments on Draft Regulations

The year 2011 began with the DRBC announcing the public hearing schedule to receive oral testimony on the proposed natural gas development regulations that were published in December 2010. The hearings, which included afternoon and evening sessions, were held in Honesdale, Pa. and Liberty, N.Y. on February 22 and in Trenton, N.J. on February 24. The 18 hours of public hearings afforded over 370 individuals the opportunity to present oral testimony. It is estimated that a total of approximately 1,100 people attended the six hearing sessions. At their March 2 meeting, the commissioners announced a 30-day extension of the written comment period from March 16 to April 15 in response to numerous requests.

DRBC received a total of approximately 69,000 submissions commenting on the December 2010 draft. Written comments included approximately 44,500 form letters (identical or nearly identical letters submitted by two or more commenters); petitions or sign-on letters (comments under which two or more individuals signed their names) bearing a combined total of approximately 19,500 signatures; and approximately 4,800 unique oral or written submissions. The commission, for the first time, accepted electronic submission of comments using a form on the National Park Service's Planning, Environment, and Public Comment (PEPC) web-based system.

All of the written and oral submissions received by the commission on the draft regulations constitute

public records and are available for review. The hearing transcripts and a large number of the written comments can be viewed on the DRBC web site.

Special November Meeting to Consider Revised Draft Regulations Postponed

DRBC published revised draft natural gas development regulations on its web site on November 8, 2011. These revisions were guided by the public's comments to the earlier December 2010 draft regulations and commissioners' discussions with their respective staff, advisors, and one another.

The revised draft regulations were scheduled to be considered by the DRBC at a special meeting on November 21, 2011, but the commissioners decided to postpone that meeting to allow additional time for review. The commissioners continue to work through some unresolved issues and no new date has yet been announced for a vote on the draft regulations.

The revised draft regulations published on November 8 comprising a proposed new Article 7 of the DRBC's water quality regulations would apply to all "natural gas development projects," including the construction and operation of all natural gas wells in the basin, regardless of target geologic formation, whether the well is for production or exploration, and whether high-volume or low-volume hydraulic fracturing is contemplated. Appurtenant infrastructure is also addressed.

The revised draft regulations are divided into sections that address the purpose, authority, and scope of the rule; definitions; administrative

Additional information can be found on the commission's web site at www.nj.gov/drbc/programs/natural/.

processes; water sources and conditions of bulk water use and management approvals for natural gas development projects; the protection of high value water resource landscapes and commission-designated Special Protection Waters through mandatory Natural Gas Development Plans for lease holdings of 3,200 acres or more and for all project sponsors who intend to develop more than five well pads; and the transfer, treatment, and discharge of wastewater generated by natural gas development activities.

According to the November 8 draft regulations, the commission would rely on the oil and gas program of the state in which a natural gas well is located to regulate the construction and operation activities of the natural gas well and well pad for which separate administration by the commission would result in unnecessary duplication. If a state or federal regulatory requirement is more stringent than a DRBC requirement, the more stringent regulation would apply. Upon its effective date, which would be 60 days after commission approval, the new Article 7 would supersede the Executive Director's Determinations dated May 19, 2009, June 14, 2010, and July 23, 2010.

Please visit the DRBC web site for the most current information on the status of the rulemaking process.

XTO Energy Water Withdrawal Application

XTO Energy submitted an application to DRBC in May 2010 requesting to withdraw up to 250,000 gallons per day of surface water from Oquaga Creek in the Town of Sanford, Broome County, to support the company's planned natural gas exploration and production activities within the basin in the New York counties of Broome and Delaware. Oquaga Creek drains to the West Branch Delaware River.

While the commissioners announced in May 2010 that they would not consider specific natural gas well pad applications until after natural gas development regulations are approved, they also indicated that water withdrawal applications associated with natural gas well pad activities within the basin, such as the one submitted by XTO Energy, should continue to be processed in accordance with existing DRBC regulations since they are similar to water withdrawal applications for other uses in the basin.

The draft docket prepared by DRBC staff in response to XTO Energy's application provides that even if the docket is issued, the company cannot withdraw any water at the site until it receives separate approvals from DRBC and the New York State Department of Environmental Conservation (NYSDEC) for those natural gas wells intended to receive the water.

The first public hearing on the draft docket was held during the commission's May 11, 2011 business meeting in West Trenton, N.J. Many of the 39 persons who testified requested

another hearing and a comment period extension. In response to the requests, the commissioners unanimously decided to keep the comment period on the XTO Energy draft docket open until the DRBC could hold another public hearing in the vicinity of the proposed withdrawal in New York.

That hearing was promptly scheduled and took place on June 1 in Deposit, N.Y. In a letter read at the hearing, NYSDEC Commissioner Joseph Martens requested "that all Delaware River Basin Commission water withdrawal applications within New York that are associated with high-volume hydraulic fracturing be postponed until completion of the New York environmental impact review process."

In response to New York's request, the commission at its December 8, 2011 meeting unanimously agreed to postpone consideration of applications for the approval of water withdrawals within New York to serve "high volume hydraulic fracturing" until the state notifies the DRBC that it has completed its environmental impact review process with respect to potential adverse impacts associated with high volume hydraulic fracturing for natural gas development. This action, which applies to the XTO Energy application, supersedes the commissioners' earlier May 5, 2010 directive regarding consideration of water withdrawal applications.

Pending Legal Challenges Against DRBC

The year ended with several legal challenges pending against the DRBC in the federal court system.

Two lawsuits were filed in U.S. District Court for the District of New Jersey against the commission and the executive director in her official capacity. One of these suits, filed by the Delaware Riverkeeper Network, consists of an appeal of the docket issued by the DRBC in July 2010 that approved a withdrawal from the West Branch Lackawaxen River by Stone Energy Corporation. The second, initiated by the Riverkeeper and Damascus Citizens for Sustainability, appeals the grandparenting clause provision of the June 2010 Supplemental Executive Director's Determination which did not prohibit natural gas exploratory wells with state approvals obtained on or before June 14, 2010 from proceeding without DRBC review. The federal judge ruled in September that the plaintiffs must join the drilling companies in the litigation as indispensable parties.

In addition, three consolidated cases were pending in U.S. District Court for the Eastern District of New York, each alleging that the commission was obligated to follow the National Environmental Policy Act (NEPA) as DRBC drafted and proposed regulations that would permit natural gas development in the Delaware River Basin.

DRBC's Natural Gas Timeline (2008-2011)

- June 2008: DRBC informs Stone Energy Corporation that it will need to apply for and receive approval from the commission before it can extract natural gas in the Delaware River Basin. This followed notification of DRBC by the Pa. Department of Environmental Protection (PADEP) that the company had drilled and cased the vertical Matoushek 1 well in Wayne County to be later stimulated for production. In December 2008, a settlement agreement between Stone Energy and DRBC is reached requiring the company to submit an application for commission review and pay a penalty for drilling the well without prior DRBC approval.
- May 2009: An Executive Director Determination (EDD) asserts DRBC review over all aspects of natural gas extraction projects in shale formations within the drainage area of the basin's Special Protection Waters regardless of the amount of water withdrawn or capacity of domestic sewage treatment facilities accepting fracking wastewater. The commissioners intend to adopt regulations at some later time following the customary public rulemaking process.
- October 2009: Chesapeake Appalachia, L.L.C. withdraws its surface water withdrawal application. This is the first natural gas-related application to receive DRBC scrutiny. A public hearing on the proposal was held in July 2009 and approximately 1,200 written submissions (excluding petitions) were received during the comment period.
- May 2010: The commissioners unanimously approve a Resolution for the Minutes directing staff to develop draft regulations on well pads in the shales for notice and comment rulemaking. Consideration of well pad dockets will be postponed until regulations are adopted. They also announce that they would consider withdrawal applications to supply water to natural gas extraction projects "in due course."
- June 2010: The May 2009 EDD is expanded to include natural gas exploratory wells, which originally had not been covered. A handful of exploratory wells that had received Pennsylvania approval on or before June 14, 2010 could proceed under this Supplemental EDD.
- July 2010: The commission approves Stone Energy Corporation's water withdrawal application to support the company's planned natural gas activities in the Pennsylvania portion of the basin; however, the DRBC docket provides that Stone Energy cannot withdraw any water until it receives separate commission approval for natural gas well pad(s). A public hearing was held during February 2010 in Matamoras, Pa. and approximately 2,000 submissions were received during the comment period.
- July 2010: The June 2010 Supplemental EDD is amended allowing two vertical Hess Corporation exploratory wells to proceed. Although the company's well drilling applications were still under active review by PADEP and awaiting a permitting decision on June 14, 2010, these wells had received Erosion and Sediment Control permits from Pennsylvania prior to that date.
- December 2010: DRBC publishes draft natural gas development regulations for public review.
- February 2011: Public hearings on the draft natural gas regulations are held in Honesdale, Pa., Liberty, N.Y., and Trenton, N.J.
- March 2011: The written comment period on the draft regulations is extended 30 days from March 16 to April 15.
- May 2011: A public hearing is held on the XTO Energy surface water withdrawal application at the DRBC business meeting. The requested withdrawal would support the company's planned natural gas activities in Broome and Delaware counties within the basin. The commissioners agree to the request to hold another hearing in the vicinity of the proposed water withdrawal in New York and extend the written comment period until that time. The second public hearing is held on June 1 in Deposit, N.Y.
- November 2011: DRBC publishes revised draft regulations which are guided by the public's comments in response to the earlier December 2010 draft and commissioners' discussions with their respective staff, advisors, and one another. The special meeting scheduled later in the month to consider adoption of the draft regulations is postponed to allow additional time for review by the five DRBC members.
- December 2011: In response to the May 31 request by NYSDEC Commissioner Martens, the DRBC unanimously decides to postpone consideration of applications for water withdrawals within New York to serve natural gas development activities, pending completion of that state's environmental impact review process. This decision postpones further DRBC consideration of XTO Energy's application.

Baseline Monitoring Program for Natural Gas Development Underway

With the ongoing consideration of draft natural gas development regulations, the DRBC recognized a unique window of opportunity to collect important baseline information. Commission staff worked throughout 2011 to characterize pre-drilling water quality conditions at numerous upper basin locations in order to better preserve and manage the existing high water quality of this region before any natural gas development activities got underway. Grants from the Otto Haas Charitable Trust and U.S. EPA supplemented DRBC operating funds to support this work.

Comprehensive Monitoring Framework

DRBC developed a Comprehensive Monitoring Framework in 2011 to ensure that important water resource locations are monitored as efficiently as possible. This approach enables staff to track monitoring performed by DRBC, state and federal agencies, academic institutions, and volunteer

organizations as well as the monitoring to be performed by applicants under the yet-to-be adopted natural gas development regulations. By accounting for monitoring work performed by multiple parties, DRBC can identify data gaps and promote efficiency.

Biological Monitoring

DRBC performed a gap analysis on the quantitative baseline biological monitoring data already collected in the upper basin by Pennsylvania DEP, New York State DEC, National Park Service, USGS, and U.S. EPA. From that analysis, DRBC targeted approximately 100 sites in Pennsylvania and New York for additional biological data collection, prepared a Quality Assurance Project Plan (QAPP), and collected baseline data using the accepted methodologies in each state. DRBC also plans an annual ambient monitoring survey, which will consist of a total of 150 sites with 75 to be sampled per year, to assess biological and habitat changes in the region.

Conductivity measures the ability of water to pass an electrical current due to the presence of ions and is useful as a general indicator of water quality. Each stream tends to have a relatively constant range of conductivity that, once established, can be used as a baseline for comparison with regular conductivity measurements. Significant changes in conductivity can be used as an indicator that a discharge or some other source of pollution has entered a stream.

Continuous Conductivity Monitoring

DRBC acquired and deployed six continuous conductivity monitors at key locations in the basin. These HOBO® conductivity loggers will provide a better understanding of pre-drilling baseline conductivity ranges over a variety of flows and conditions, including road salting, and will allow DRBC to better differentiate between conductivity spikes that may arise due to natural gas drilling-related activities versus background conditions.

Reanalysis of Archived Samples

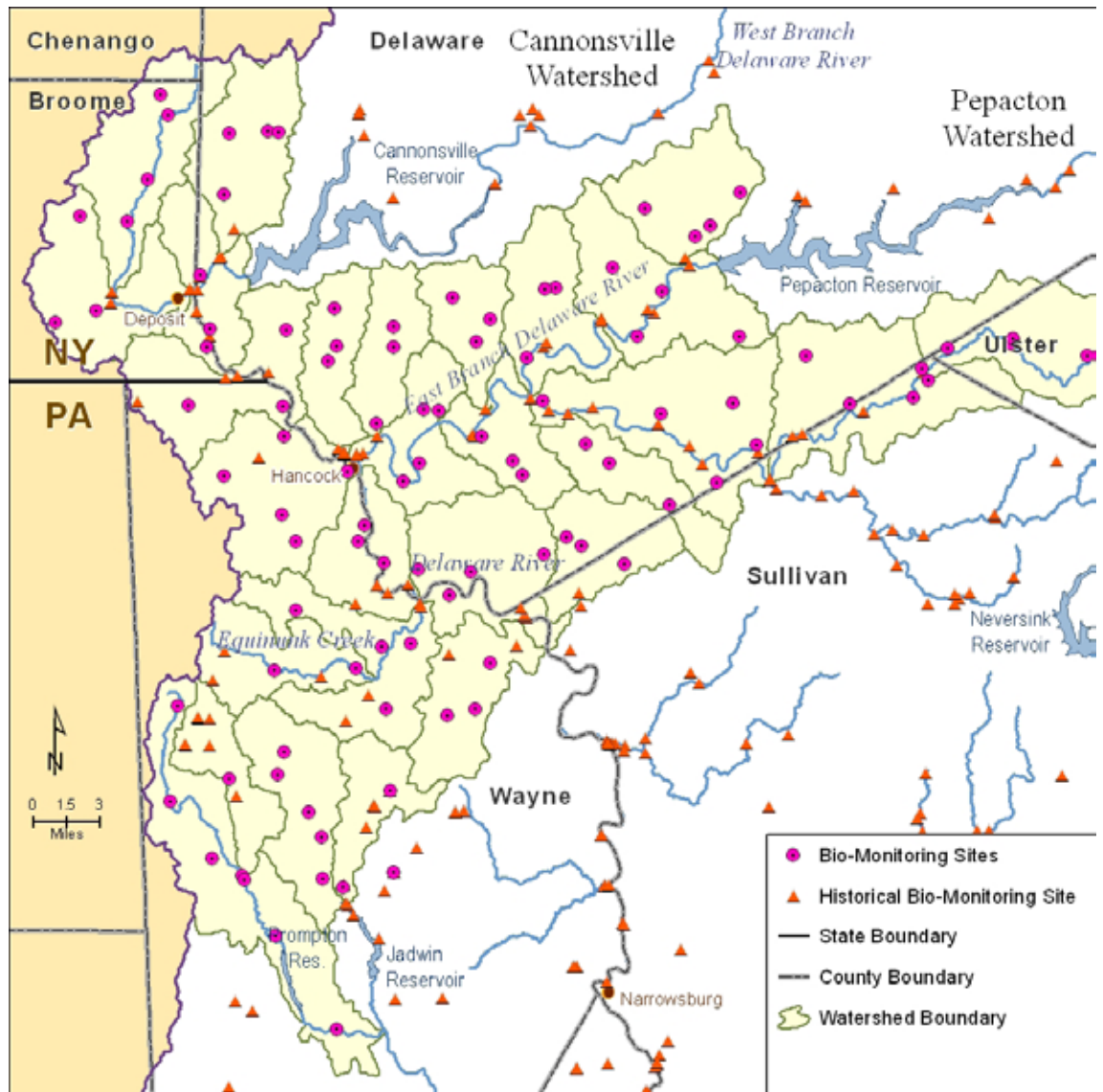
In 2009 and 2010, DRBC collected and analyzed samples at Interstate Control Points (ICPs) on the main stem Delaware River and Boundary Control Points (BCPs) on tributaries under the Scenic Rivers Monitoring Program. Analytical work was performed by



This is one of the six continuous conductivity monitors being used by DRBC staff to collect important baseline information in the upper basin.

The Academy of Natural Sciences of Drexel University, which archived frozen samples for potential later use. DRBC worked with the Academy and the Smithsonian Institution in 2011 to reanalyze those archived samples for signature analytical parameters related to hydraulic fracturing, including barium, strontium, sodium, magnesium, calcium, potassium, bromide, and sulfate. Approximately

700 archived samples were analyzed, along with new samples collected during the summer of 2011. Together, these results will provide a strong record of baseline conditions at key water quality management locations.



This map depicts 2011 spring/summer biomonitoring sites in subbasins located in the following counties: Wayne (Pa.), Delaware (N.Y.), Broome (N.Y.), Sullivan (N.Y.), and Ulster (N.Y.).

Basin News Briefs

Socioeconomic Value of the Delaware River Basin

An October 2011 University of Delaware report summarized the socioeconomic value of water, natural resources, and ecosystems in the Delaware River Basin. Describing it as an “economic engine that supplies drinking water to the first (New York City) and seventh (Philadelphia) largest metropolitan economies in the United States and supports the largest freshwater port in the world,” the study also noted that the basin’s population of more than 8.2 million would equate into the 12th most populous U.S. state.

Among the report’s key findings was that the Delaware River Basin:

- Contributes \$25 billion in annual economic activity from recreation, water quality, water supply, ecotourism, forest, agriculture, open space, and port benefits;
- Provides ecosystem goods and services (natural capital) of \$21 billion per year in 2010 dollars with a net present value of \$683 billion discounted over 100 years; and
- Is directly/indirectly responsible for 600,000 jobs with \$10 billion in annual wages in the coastal, farm, ecotourism, water/wastewater, ports, and recreation industries.

The report was prepared by Gerald Kauffman, Project Director of the Water Resources Agency at the university’s Institute for Public Administration. It was “designed to update economic analyses for the Delaware River and Bay conducted 20 years ago and incorporate more recent valuation data from the emerging fields of ecological economics and ecosystem services.” The author

The University of Delaware’s Jerry Kauffman speaking at the “Delaware River Celebration” on Oct. 19. His topic, “The Delaware River Basin - The Economic Engine of the Delaware Valley,” outlined the annual economic benefits of the basin. (Photo by David B. Soete)



shared his findings at the conference session preceding the July 13, 2011 DRBC meeting and at the “Delaware River Celebration” event on October 19.

Links to the executive summary, the complete report, and the October powerpoint presentation can be found at www.nj.gov/drbc/basin/.

Four New Flood Inundation Map Locations

Flood inundation maps for four new locations on the Delaware River were added to the National Weather Service (NWS) Advanced Hydrologic Prediction Service (AHPS) web site in July 2011. The four new sites are Phillipsburg, N.J./Easton, Pa., Belvidere, N.J., Montague, N.J., and Port Jervis, N.Y.

Along with similar maps at Trenton, N.J., Lambertville, N.J./New Hope, Pa., Stockton, N.J., Frenchtown, N.J., and Riegelsville, N.J. that already became available in September 2010, a total of nine flood inundation map sites on the main stem Delaware River can now be accessed online by the public.

Flood inundation mapping is an interactive, web-based product that shows the extent and depth of floodwaters over given land areas, enabling public safety officials and residents to examine the threat of flooding and determine areas of highest flood risk.

The maps were made possible by the partnership efforts of the NWS, U.S. Army Corps of Engineers - Philadelphia District, and DRBC. Congressional and grant funding was secured by the DRBC over a multi-year period to finance portions of the project.

Flood inundation mapping was one of the recommendations identified in the Delaware River Basin Interstate Flood Mitigation Task Force Report following the floods of 2004, 2005, and 2006 to improve flood warnings and aid in conveying an awareness of flood risk along the Delaware River.

Additional information about flood warning enhancements throughout the basin can be found on the DRBC web site at www.nj.gov/drbc/programs/flood/warning.html.

NWS Expands Daily River Rise Forecasts in Delaware Basin

The National Weather Service’s Middle Atlantic River Forecast Center announced in June 2011 that river rise forecasts for 17 “flood-only” points in the Delaware River Basin will now be issued daily. As a result of this conversion, 48-hour forecasts will be routinely issued by the NWS every morning, not just when flooding is predicted. In addition, the NWS will issue updates when action or flood stage is expected to be exceeded, to show a final “all clear” when critical levels are no longer expected, when observed stages deviate by a foot or more from existing forecasts, or when the amount of forecasted rain changes the existing river forecast.

The converted Delaware River forecast points are Tocks Island, Easton,

Frenchtown, Stockton, New Hope, and Washington Crossing. The other 11 locations include Goddefroy, N.Y. (Neversink River), Walton, N.Y. (West Branch Delaware River), Allentown, Pa. (Jordan Creek), Berne, Pa. (Schuylkill River), Pottstown, Pa. (Schuylkill River), Leighton, Pa. (Lehigh River), Chadds Ford, Pa. (Brandywine Creek), Graterford, Pa. (Perkiomen Creek), Minisink Hills, Pa. (Brodhead Creek), Shoemakers, Pa. (Bush Kill), and Trenton, N.J. (Assunpink Creek).

Links to all NWS AHPS river rise forecasts issued throughout the Delaware Basin can be found on the DRBC web site at www.nj.gov/drbc/hydrological/river/ahps/.

First Basinwide Interactive Source Water Forum

The Delaware River Basin Source Water Collaborative Forum was held on March 10, 2011 to identify and address issues impacting source water resource sustainability, to connect basinwide and local players, and to create a framework for ongoing collaboration.

Sponsored by the U.S. EPA Source Water Collaborative in conjunction with Delaware, New Jersey, New York, Pennsylvania, DRBC, and WHY (Greater Philadelphia's leading public media provider), participants included officials, planners, water suppliers, practitioners, and others with a stake in clean and plentiful drinking water.

The forum used innovative audio-video technology, allowing for simultaneous interaction, participation, and communication at six meeting locations throughout the basin, as well as a worldwide Internet broadcast.

The six locations included WHY (Philadelphia, Pa.), Sullivan County Community College (Loch Sheldrake, N.Y.), Monroe County Public Center (Stroudsburg, Pa.), Reading Area Community College (Reading, Pa.), Rutgers EcoComplex (Bordentown, N.J.), and the University of Delaware (Newark, Del.).

Regional and local topics on the agenda included: water use and water supply; regional impacts of climate change; strategies for water resource protection; and tools and tactics for local protection.

Complete forum proceedings can be found online at www.delawarebasindrinkingwater.org/resources/.

DRB Selected for USGS WaterSMART Study

The Delaware River Basin was selected as one of three focus areas nationwide to be included in the multi-year U.S. Geological Survey (USGS) WaterSMART program. Also chosen were the Colorado River Basin and the Apalachicola, Chattahoochee, Flint basins.

According to the U.S. Department of the Interior, WaterSMART (Sustain and Manage America's Resources for Tomorrow) "will work with states, tribes, local governments, and non-governmental organizations to secure and stretch water supplies for use by existing and future generations to benefit people, the economy, and the environment, and will identify adaptive measures needed to address climate change and future demands."

The USGS stated several reasons

for the DRB's selection as a focus area: "The basin is the subject of the largest interbasin withdrawal of water east of the Mississippi River and provides water to over 15 million people, more than five percent of the Nation's population. Two Supreme Court decrees and coordination by an interstate river basin commission including the States of Delaware, New Jersey, New York, and Pennsylvania are just part of the history of allocating scarce resources in the basin. In the upper portions of the basin, concerns over the effects of new natural gas development and the freshwater requirements for a recently-discovered endangered mussel species have added new complexities to managing water resources in the basin."

DRBC looks forward to working with USGS as a stakeholder partner on this project.

Water System Audits and Water Loss Control Workshop

The DRBC partnered with the Philadelphia Water Department (PWD), N.J. American Water, and Aqua Pennsylvania to present a "Water System Audits and Water Loss Control" workshop on April 13, 2011 at the Rutgers EcoComplex in Bordentown, N.J.

The day-long workshop was part of an ongoing outreach effort by DRBC to inform water system operators in the basin about changes in DRBC regulations. In 2009, the commission approved a program requiring water suppliers to follow a revised water audit approach to identify and control water loss in the basin. The new approach is consistent with the International Water

Association (IWA) and American Water Works Association (AWWA) Water Audit Methodology that is considered a best management practice in water loss control.

The commission's program calls for phased implementation. DRBC encouraged water purveyors to voluntarily implement the new audit format in 2011 in anticipation of it becoming a requirement beginning in calendar year 2012, with initial reporting due by March 31, 2013. The new rules are based on clear definitions and rational accounting procedures that result in a fuller understanding of the causes of water loss and allow system operators, utility managers, and regulators to better target their efforts to improve water supply efficiency. *An estimated 150 million gallons of treated and pressurized water is physically lost from public water supply distribution systems in the basin every day.* The DRBC program aims to reduce water demand at the source, reduce treatment costs,

improve system efficiency, and enhance purveyor revenue.

In order to support water system operators through the reporting transition, DRBC and its partners presented modules at the workshop that covered: 1) DRBC's water loss accountability requirements and water audits; 2) conducting the water audit and analyzing data; and 3) managing water losses.

The workshop also included a hands-on facilitated demonstration with attendees completing a water audit and populating the AWWA Free Water Audit Software©.

For more information, visit www.nj.gov/drbc/programs/supply/audits.

Updated Toxic Criteria for the Tidal River and Bay Goes Into Effect

In December 2010, the DRBC adopted modifications to its Water Quality Regulations, Water Code, and Comprehensive Plan that updated

stream quality objectives (water quality criteria) for human health and aquatic life for toxic pollutants in the Delaware Estuary and extended criteria to the Delaware Bay. These changes brought the commission's more than 200

toxic pollutant criteria into conformity with current U.S. EPA guidance while providing a consistent regulatory framework for managing the tidal portion of the main stem Delaware River. The revised toxics criteria became effective when the final notice was published on March 23, 2011.

Additional information can be found on the DRBC web site at www.nj.gov/drbc/quality/toxics/.

DRBC Authorizes Instream Flow Needs Study

The commission in 2011 contracted with The Nature Conservancy (TNC) to perform an evaluation of ecological flow needs for subwatersheds of the Delaware Basin. The evaluation will include a summary report and recommendations to protect key ecological communities for the range of habitats in the basin.

Prior to the commissioners unanimously approving the resolution authorizing the contract at their September 2011 meeting, Deputy Executive Director Bob Tudor explained that this study exemplified DRBC's planning and management functions to ensure that there is sufficient water in basin streams to meet the needs of people and aquatic life for decades into the future.

For critical low flow periods, the commission currently imposes minimum pass-by requirements for withdrawals based on a seven-day low flow with a ten-year recurrence ("Q7-10"), an extremely low level of water in a stream system. The commission initially relied on the Q7-10 approach in developing its water quality regulations to determine the capacity of streams



George Kunkel (PWD) presents information on AWWA water loss control tools at the April 2011 workshop. (Photo by P. V'Combe)

to assimilate wastewater. It later applied Q7-10 to establish pass-by flow conditions, or how much water should be left in the stream during extremely low-flow periods. Based on improved understanding of ecological flows, however, DRBC has found that Q7-10 may not provide adequate protection for the aquatic life of streams and rivers, and a better understanding of flow needs is needed.

TNC over the next year will carefully examine different physiographic provinces throughout the basin to determine the seasonal needs of different aquatic communities, including during low flows in the summer and high flows in the spring, to approximate natural variability. TNC has a proven track record of performing this type of analysis around the country and specifically in the mid-Atlantic region. Its work has included basin-scale studies in the Ohio and Susquehanna river basins similar to that to be undertaken under this contract for the Delaware.

The study, which will focus on the portion of the basin not comprising the coastal plain, is intended to support DRBC planning and management objectives.

Public-Private Partnership Successfully Tests Early Spill Detection Sensor

DRBC and USGS collaborated with GE Analytical Instruments on a unique test deployment of an oil sheen sensor in the tidal Delaware River. The idea arose during meetings of the Delaware River and Bay Oil Spill Advisory Committee, which includes organizations and agencies with a vested

interest in early detection of potential oil spills in this important waterway.

“The cooperation among the public and private sector allowed the work to be performed quickly and at virtually no cost, highlighting the power of strong partnerships,” DRBC Executive Director Carol R. Collier said.

The unit, a GE Leakwise ID-221 Sensor, was deployed at the Ben Franklin Bridge water quality station in Philadelphia for the 2011 summer monitoring season. The sensor is a continuous monitor that uses high frequency electromagnetic energy absorption to sense the presence of a floating hydrocarbon (oil) sheen. Since water absorbs more electromagnetic energy than hydrocarbons, a change in the absorption rate of the water indicates the presence of hydrocarbons. The sensor can detect a 0.3-millimeter sheen and continues to monitor oil layer growth up to one inch.

The ID-221 Sensor is typically used to detect floating oil sheens in protected settings, such as tanks, ponds, and monitoring wells. However, the collaborators wanted to see how the device would function in a high energy, ambient environment. In particular, they wanted to see if waves or tidal range in excess of six feet would negatively impact the sensor’s reliability.

Additionally, the partners wanted to determine if the sensor’s signal could be integrated into the USGS communications backbone, the National Water Information System (NWIS). That question was answered when it was installed and communicating to NWIS within a half hour. The ability to communicate

through networks like NWIS opens up a wide range of available tools, such as real time alerts, an area of particular interest to DRBC.

The sensor collected 3,700 measurements during its deployment and functioned correctly over a wide range of environmental conditions. Only the extreme conditions of Hurricane Irene generated multiple false positives; however, the unit recovered and resumed providing correct data after Irene.

The success of this test deployment opens the door to several potential uses. For example, ambient water sheen detectors could be installed at drinking and cooling water intakes, which are sensitive to the presence of oil sheens. The availability of early spill detection directly connected to existing, continuous real-time water quality monitoring networks is something that should be further explored in the future.

Additional information about GE Leakwise Sensors and the NWIS can be found at www.geinstruments.com/products-and-services/leakwise-oil-detectors and waterdata.usgs.gov/nwis, respectively.

IT Upgrades to Improve Data Management and Retrieval

The commissioners at their May 2011 meeting gave the green light for DRBC staff to move ahead with efforts to enhance and update the agency’s information technology (IT) capabilities. While the DRBC has improved its technology over the years, additional enhancements are needed to better manage data and information securely and in an interactive fashion.

To date, DRBC has used a paper-based system for all filings. It now seeks to take the significant step of adding the capability to accept electronic, online applications, reports, and other information through the web so this material can be stored, analyzed, and retrieved more efficiently. Another important feature will be the development of a web portal to easily share electronic information with the public.

The May resolution adopted unanimously by the five-member commission authorized a professional services contract to be signed with URS Corporation to work with DRBC staff on the IT upgrade project. This company was selected among 12 submissions received by the commission in response to a Request for Proposal and Quotation.

Schuylkill River Restoration Fund Growing

With contributions from Exelon's Limerick Generating Station, the Philadelphia Water Department (PWD), and the Partnership for the Delaware Estuary (PDE), the Schuylkill River Restoration Fund was able to provide nearly \$400,000 in grants for seven projects to improve water quality in the Schuylkill River and its tributaries in 2011. The Schuylkill is the Delaware River's largest tributary.

The seven grant recipients and projects included:

- Berks County Conservancy - \$97,755 for agricultural improvements on three Berks County farms.
- Berks County Conservancy - \$4,000 for the Oley Hills Land Protection

Project, which will provide assistance in the conservation of a 78-acre property in Berks County.

- Greening Greenfield - \$50,000 for the Green Roof Installation at the Albert M. Greenfield School in Philadelphia.
- Maiden Creek Township - \$30,000 for Willow Creek Habitat Restoration.
- Montgomery County Conservation District - \$55,000 for Schuylkill Action Students-Stony Creek Restoration.
- Schuylkill Headwaters Association - \$99,450 for the Wagner Run Project.
- The Schuylkill Project - \$60,000 for the Shawmont Restoration Project in Northwest Philadelphia.

The Schuylkill River Heritage Area (SRHA) administers the fund which supports projects that mitigate abandoned mine drainage (AMD), stormwater run-off, and agricultural pollution. This is the sixth year the grant program has been available and the first year that funds were available to assist with protected land easements.

DRBC Executive Director Carol R. Collier attended the grant announcement, which took place at the Albert M. Greenfield School. "They say it takes a village to raise a child, but it takes a whole watershed of citizenry to really protect a watershed as beautiful as the Schuylkill," Collier said.

Also in attendance at the grant announcement in Philadelphia were State Sen. Lawrence M. Farnese, Jr. (Phila.-1), State Rep. Kenyatta J. Johnson (Phila.-186), and a representative for State Sen. Vincent J. Hughes (Phila.-7), along with officials from Exelon, PWD, and SRHA.

Exelon contributed nearly \$215,500 to this year's fund and PWD donated \$100,000. PDE, a first-time contributor, allotted \$10,000 specifically for land protection. Exelon has provided over \$1 million to the fund since it was founded in 2005. The Schuylkill River Restoration Fund was previously known as the Exelon Schuylkill River Watershed Restoration Fund, but was renamed to indicate the expansion from a solely Exelon-funded initiative. It originated in conjunction with a DRBC docket issued to Exelon for its Limerick Generating Station.

The non-profit organizations and government agencies that receive money annually from the fund are selected by a committee comprised of representatives from Exelon, DRBC, PWD, U.S. EPA, PADEP, PDE, and SRHA.

For more information, please visit www.nj.gov/drbc/programs/project/wadesville/schuylkill.html.

Basin Conservation Legislation Reintroduced in Washington

The Delaware River Basin Conservation Act (S. 1266/H.R. 2325) was reintroduced on June 23, 2011 by Senator Tom Carper (Del.) and Congressman John Carney (Del.-At Large).

The bill would require the U.S. Fish and Wildlife Service, in partnership with other federal agencies, to establish a Delaware River Basin Restoration Program to increase coordination and enhance collaboration of conservation efforts underway throughout the basin. It also would authorize a competitive grants program and technical assistance to further leverage the limited federal

resources available to the watershed. Currently, there is no federal program to protect and enhance the entire basin.

The legislation was first introduced in February 2010 by then-Congressman Mike Castle (Del.-At Large) with the support of six cosponsors. No action was taken on that bill, so it expired at the end of 2010. Rep. Carney replaced Rep. Castle as Delaware's congressman in January 2011.

“By investing in our watershed, we are investing in a resource that not only powers our environment and our local communities, but that also fuels our economy,” Senator Carper said at an event held in Wilmington to discuss the importance of the legislation.

“This program will improve coordination between government, private, and non-profit entities and focus our efforts on the most effective projects,” Rep. Carney said when introducing H.R. 2325. “The grants will be competitive and peer reviewed, ensuring we are being good stewards of the Delaware River Basin and taxpayer dollars alike. I am honored to carry on this effort, which my predecessor, Mike Castle, championed.”

S. 1266 is cosponsored by Senators Chris Coons (Del.), Robert Menendez (N.J.), Frank Lautenberg (N.J.), Charles Schumer (N.Y.), Kirsten Gillibrand (N.Y.), and Bob Casey (Pa.). The cosponsors of the House bill are Reps. Rush Holt (N.J.-12), Maurice Hinchey (N.Y.-22), Frank LoBiondo (N.J.-2), Mike Fitzpatrick (Pa.-8), Charlie Dent (Pa.-15), Jon Runyan (N.J.-3), Rob Andrews (N.J.-1), Allyson Schwartz (Pa.-13), Patrick Meehan (Pa.-7), Jim Gerlach (Pa.-6), Paul Tonko (N.Y.-21),

Bob Brady (Pa.-1), and Chris Smith (N.J.-4).

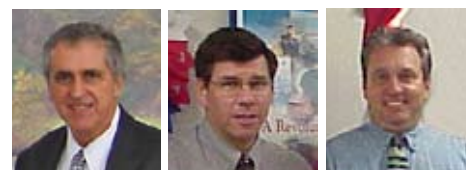
In December 2011, the Senate Environment and Public Works Committee approved the legislation for consideration by the full Senate, but no action was taken on the House bill as the year ended.

Goodbyes to Partner Agency Staff

During 2011, a number of persons retired from various agencies and organizations who worked closely with DRBC over many years:

- John H. Talley, P.G.—Director of the Delaware Geological Survey & Delaware State Geologist, University of Delaware
- Stephen F. Blanchard—Delaware River Master, USGS
- DeNise Cooke Bauer—Senior Natural Resources Specialist, Delaware Water Gap National Recreation Area, National Park Service
- Gary N. Paulachok, P.G.—Deputy Delaware River Master, USGS
- Bruce E. Krejmas—Hydrologist, Office of the Delaware River Master, USGS
- William E. Douglass—Executive Director, Upper Delaware Council

The commission was saddened by the passing of C. William “Bill” Winslade, Jr., Yardley (Pa.) borough manager and emergency management coordinator, who died suddenly in March 2011 at the age of 55. Bill previously served as vice chair of the DRBC Flood Advisory Committee and also was a member of the Delaware River Basin Interstate Flood Mitigation Task Force. Bill was very dedicated to his community and to flood mitigation.



(From left to right) Upper Delaware Council Executive Director Bill Douglass, Delaware River Master Steve Blanchard, and Deputy Delaware River Master Gary Paulachok.

Financial Summary

DRBC's financial records are audited annually and are available for inspection, upon request, at the commission's West Trenton headquarters.

DRBC Fiscal Year 2012 (July 1, 2011 – June 30, 2012)

Calendar year 2011 got off to a shaky start with the news that the proposed Delaware state budget did not include any funding support for the DRBC's FY 2012 current expense (operating) budget. Intensive efforts were undertaken to educate Delaware's leaders that such a move should be reviewed and corrected. Executive Director Carol R. Collier testified on February 15 before the General Assembly's Joint Finance Committee (JFC), comprised of senators and representatives who have the responsibility of reviewing the governor's proposal and drafting the necessary budget legislation for final adoption. Executive Director Collier and Deputy Executive Director Bob Tudor also met with Governor Jack Markell in late March to discuss the seriousness of the issue. Thanks to the support of Governor Markell and legislators led by State Senator Brian Bushweller (Central Kent County-17), who serves on the JFC, Delaware's full "fair share" contribution of \$447,000 was restored in the state's annual budget that became effective on July 1, 2011.

The DRBC's FY 2012 operating budget as originally proposed called for signatory party contributions the same as last year: Pennsylvania \$893,000 (25%), New Jersey \$893,000 (25%), federal government \$715,000 (20%), New York \$626,000 (17.5%), and Delaware \$447,000 (12.5%). These percentages were consistent with the tacit agreement reached by the five DRBC members in 1988 which apportioned signatory party contributions.

The \$5,660,900 current expense budget unanimously adopted by the commissioners on June 28, 2011 called for the following signatory party contributions: Pennsylvania \$893,000, New Jersey \$893,000, federal government \$0, New York \$355,000, and Delaware \$447,000. The approved annual operating plan reflected signatory member contributions that were \$1 million less than originally anticipated and relied on increased use of unrestricted general fund equity to balance the budget, which is not sustainable. The adopted capital budget (Water Supply Storage Facilities Fund) reflected revenues of \$4,126,000 and expenditures of \$3,735,000.

DRBC Fiscal Year 2011 (July 1, 2010 – June 30, 2011)

During FY 2011, New Jersey and Pennsylvania each paid their full fair share of \$893,000. New York's payment of \$370,505 was \$255,495 below its 17.5% full fair share and Delaware's \$127,000 cash payment was \$320,000 below its 12.5% full fair share. However, to partially address the \$320,000 shortfall, Delaware provided \$123,705 worth of in-kind laboratory services to DRBC. No federal contribution to support the DRBC's current expense budget was appropriated, which has only been provided once since October 1, 1996.

DRBC Reaches Out to Vice President Biden

In response to a letter to Vice President Joe Biden, Executive Director Collier and Deputy Executive Director Tudor met with several senior members of the vice president's staff in December 2011 to discuss the DRBC's value to the federal government. During his service in the United States Senate, Vice President Biden consistently supported the work of the DRBC. It is hoped that the information shared with his staff at the December meeting will finally break through the obstacles encountered since October 1996 and result in a favorable decision to include funding for the DRBC in the president's future budget requests. Cumulative shortfalls in federal signatory member funding from FY 1996 through FY 2011 continue to grow and now total \$9,279,250.

Delaware River Basin Commission Fiscal Summary - Agencywide for Fiscal Year Ending June 30, 2011	
Revenues:	
Signatory Contributions	\$ 2,283,505
Grants & Special Projects	1,358,461
Surface Water Supply Charges	2,860,915
Project Review Fees, Investment Income & Other	2,078,255
Expenses:	
Salaries & Benefits	\$ 4,983,536
Operating Expenses	2,397,416
Debt Service and Depreciation	1,573,974
Building Improvements/Equipment Acquisition	29,736



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