

**SUSQUEHANNA RIVER BASIN COMMISSION**  
 1721 North Front Street • Harrisburg, PA 17102-2391 • www.srbc.net

**FOR IMMEDIATE RELEASE**  
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**CONTACT:** Susan Obleski  
 Director of Communications  
 Susquehanna River Basin Commission  
 Office: (717) 238-0423, x316 Cell: (717) 215-7278

**SUSQUEHANNA BASIN STREAMS, GROUNDWATER AND SOIL MOISTURE ALL ABOVE NORMAL IN RESPONSE TO NEAR-RECORD PRECIPITATION IN 2004**  
**SRBC summarizes hydrologic conditions and flooding in 2004**

NORTH EAST, Md. – The Susquehanna River Basin Commission (SRBC) today reported the hydrologic conditions for January 1 through November 30, 2004 and flooding in 2004. For the second year in a row, near record-setting precipitation amounts resulted in streamflow and soil moisture levels being much above normal. Groundwater levels also were above normal. SRBC presented this hydrologic summary during its quarterly business meeting in North East, Md.

The hydrologic indicators reported were: precipitation, streamflow, groundwater and soil moisture. SRBC compared 2004 precipitation and streamflow conditions with those in 2003, 2002 and 2001 to show how they have varied in the last four years – 2002 and 2001 were drought years.

**PRECIPITATION in inches** for January 1–November 30 in 2004, 2003, 2002, 2001. Below is the average precipitation for the New York and Pennsylvania (above Harrisburg) portions of the Susquehanna basin.

<b>Normal for this 11-month period</b>	<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>
37.4	47.27	46.73	37.37	29.65

Average precipitation from January 1–November 30, 2004 (shown as “actual”) for Maryland counties located partially in the Susquehanna basin. “Normal” represents the long-term average for the period.

<b>Baltimore</b>	<b>Carroll</b>	<b>Cecil</b>	<b>Harford</b>
52.1 (actual)	41.6 (actual)	53.0 (actual)	51.7 (actual)
40.5 (normal)	39.1 (normal)	38.5 (normal)	41.6 (normal)

**STREAMFLOWS** (for January 1–November 30 in 2004, 2003, 2002, 2001)

**Susquehanna River at Waverly, N.Y.**

<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>
41%	56%	19%	17%
above normal	above normal	above normal	below normal

**Chemung River at Chemung, N.Y.**

<b>2004</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>
63%	53%	13%	35%
above normal	above normal	below normal	below normal

**STREAMFLOWS continued** (for January 1–November 30 in 2004, 2003, 2002, 2001)

**Susquehanna River at Wilkes-Barre, Pa.**

<b>2004</b> 45% above normal	<b>2003</b> 51% above normal	<b>2002</b> 4% above normal	<b>2001</b> 26% below normal
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**West Branch Susquehanna River at Williamsport, Pa.**

<b>2004</b> 58% above normal	<b>2003</b> 48% above normal	<b>2002</b> 10% below normal	<b>2001</b> 39% below normal
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**Juniata River at Newport, Pa.**

<b>2004</b> 74% above normal	<b>2003</b> 63% above normal	<b>2002</b> 37% below normal	<b>2001</b> 41% below normal
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**Susquehanna River at Harrisburg, Pa.**

<b>2004</b> 45% above normal	<b>2003</b> 52% above normal	<b>2002</b> 11% below normal	<b>2001</b> 37% below normal
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**Susquehanna River at Conowingo, Md.**

<b>2004</b> 74% above normal	<b>2003</b> 45% above normal	<b>2002</b> 18% below normal	<b>2001</b> 41% below normal
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**Deer Creek at Rocks, Md.**

<b>2004</b> 45% above normal	<b>2003</b> 62% above normal	<b>2002</b> 64% below normal	<b>2001</b> 36% below normal
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**GROUNDWATER** (Gage readings closer to the surface of the ground indicate higher groundwater levels.)

<b>Groundwater Gage Location</b>	<b>Nov. 1 – 30, 2004 (ft below surface of ground)</b>	<b>Long-term Average for Nov. (ft below surface of ground)</b>
Chenango County, N. Y.	8.99	9.16
Bradford County, Pa.	8.19	9.45
Clinton County, Pa.	47.84	50.65
Union County, Pa.	37.65	39.09
Blair County, Pa.	10.46	13.57
Dauphin County, Pa.	4.55	4.98

**SOIL MOISTURE (Palmer Index)** The Palmer Index is measured in these ranges:

4.0+	Extremely Moist
3.0 to 3.99	Very Moist
2.0 to 2.99	Moderately Moist
1.0 to -1.99	Near Normal
-2.0 to -2.99	Moderate Drought
-3.0 to -3.99	Severe Drought
-4.0 or less	Extreme Drought

**2004 Palmer indices in the Susquehanna basin** for the week ending December 4, 2004  
NEW YORK – ranged from 5.48 to 5.85  
PENNSYLVANIA – ranged from 5.70 to 7.89  
MARYLAND – 2.68

### **FLOODING IN 2004**

SRBC also reported on the tropical storms that went through the Susquehanna basin in 2004, resulting in minor to significant flooding, including the devastation from Tropical Storm Ivan:

August 12–13, Tropical Storms Bonnie and Charley: The two storms and a related rain event caused the Tioughnioga River at Cortland, N.Y., to rise 2 inches above flood stage. In Pennsylvania, the Cocalico Creek in Lancaster County flooded and 30 roads were closed. In Lebanon County, there were flooded basements and several road closures, including in Newmanstown where some roads were under 5 feet of water. In Summit Station, Schuylkill County, roads were closed and more than 15 basements flooded.

September 8–10, Tropical Storm Frances: The tropical storm dumped heavy rains on central Pennsylvania and western New York. Areas along the Juniata River in Pennsylvania were affected as the river rose above flood stage at many locations. In New York, flooding was reported along the Chemung River in Elmira and in Chemung.

September 18–19, Tropical Storm Ivan: A complex interaction between a strong, slow-moving cold front and the remnants of Hurricane Ivan produced heavy rainfall and moderate-to-major flooding throughout the Susquehanna basin – many areas were still saturated from the Frances event. Two drowning deaths were reported in central Pennsylvania. Moderate-to-major flooding occurred in the following basin counties: **New York** – Broome; **Pennsylvania** – Bradford, Cameron, Centre, Clinton, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lackawanna, Luzerne, Lycoming, Mifflin, Montour, Northumberland, Perry, Schuylkill, Snyder, Susquehanna, Union and Wyoming; and **Maryland** – Cecil.

September 27–29, Tropical Storm Jeanne: This third tropical storm to cross the basin in September, moved across southeastern Pennsylvania and produced rain in excess of 4 inches in some locations in the Lower Susquehanna subbasin, causing widespread small stream flooding. In the Wyoming Valley region, 2-3 inches of rain caused minor flooding.

During the weekend of September 18 and 19, Tropical Storm Ivan dumped anywhere from 1.5 to 9.5 inches of rain on the Susquehanna River Basin over a brief period. Early estimates had the damages in the Susquehanna basin ranging from \$200 to \$300 million, and 37 counties in the Pennsylvania portion of the basin were declared disaster areas by the state and federal governments. The damages would have been much worse in the basin were it not for the nonstructural flood protection programs, namely the Susquehanna Flood Forecasting and Warning System, combined with the structural flood control projects, including dams, levees, and channels.

The Baltimore District of the U.S. Army Corps of Engineers (USACE) operates 14 flood control reservoirs in the Susquehanna basin. Those 14 reservoirs along with the 21 USACE-built and locally

maintained flood control projects held back an estimated 135 billion gallons of flood waters. This prevented more than \$1.6 billion in additional flood damages.

Leading up to Tropical Storm Ivan, the data provided by the Susquehanna Flood Forecasting and Warning System allowed the National Weather Service to issue near-perfect flood predictions and warnings, reducing millions in damages.

Early flood warnings help save lives and reduce annual average flood damages by \$32 million in the Susquehanna basin. The enhanced Susquehanna System was initiated by SRBC in 1985 because the Susquehanna basin is one of the most flood-prone areas in the country. For more information on the Susquehanna Flood Forecasting and Warning System, and for photos and news articles on Tropical Storm Ivan, go to SRBC's web site at <http://www.susquehannafloodforecasting.org/>.

SRBC is the governing agency established under a 100-year compact signed on December 24, 1970 by the federal government and the states of New York, Pennsylvania and Maryland to protect and wisely manage the water resources of the Susquehanna River Basin. The Susquehanna River starts in Cooperstown, N.Y., and flows 444 miles to Havre de Grace, Md., where the river meets the Chesapeake Bay.

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