

2004 FLOODING IN THE SUSQUEHANNA RIVER BASIN

Susquehanna River Basin Commission

March In New York, the month began with a significant snowpack across the entire Upper Susquehanna region. Gradual snowmelt runoff brought minor flooding that was confined to the headwaters of Tioughnioga and Chenango and a portion of the Susquehanna River in New York. The high stream flows during the first week were ideal for lifting, breaking up and flushing out the ice without widespread ice jam problems.

3/4/04 A raft of ice jammed up at two bridges at Chenango Bridge, N.Y. and almost completely blocked the flow of the Chenango River, flooding several businesses.

3/6-7/04 Runoff from earlier heavy rain showers and thunderstorms, and possibly ice jams, caused minor flooding in and around Selinsgrove, Snyder County, Pa. Residents of the Isle of Que were evacuated.

3/28/04 Minor flooding occurred on the Tioughnioga River at Cortland, N.Y. There was concern that there may be significant snow in the upper reaches of the river, but mainly rain alone fell and brought the river slightly above flood stage. By the end of the month, all streams had fallen back to levels normal for late March.

April 4/13-15/04 Extended periods of rain brought very quick rises to the rivers in the Upper Susquehanna during this 3-day period. No flooding occurred but both headwater points of Cortland on the Tioughnioga River and Sherburne on the Chenango crested at 6.2 and 6.6 feet respectively (flood stage is 8.0 feet). Minor flooding problems in Cortland, Tompkins, and Schuyler counties, such as secondary road closures due to ponding from plugged culverts, caused flood advisories to be issued.

- Cumberland County, Pa. – Minor flooding occurred along portions of the Conodoguinet Creek. Potato Road near Upper Frankford was closed, due to flooding. Property damage was minimal in the county.

May 5/9/04 Thunderstorms produced flash flooding in York County, Pa., and approximately 7 inches of rain fell between 8:00 and 11:00 p.m. The storm washed out or closed 20 roads and led to 12 vehicle and building water rescues. Several basements also flooded, and 800-900 people in the Wintertown area lost electrical power to their homes or businesses. One car was swept off a road in Felton, as the driver tried to cross a flooded bridge. The rain-swollen creek, a branch of Muddy Run, swept the car downstream and both the driver and her passenger drowned.

5/12/04 A nearly stationary thunderstorm developed in Wyoming County, Pa., with rainfall totals exceeding 6 inches in just a few hours. Massive flash flooding of Moneypenny Creek caused damages exceeding \$500,000.

5/21-24/04 A series of severe storms caused erosion and flood damage in Allegany and Steuben Counties, N.Y. The damage to roads and infrastructure in Steuben County totaled \$2.5 million.

June 6/14/04 Thunderstorms produced heavy rain and flash flooding across south-central York County and Adams County.

- York County, Pa. – In Dallastown, along Indian Rock Road, 2 inches of rain fell in 45 minutes and 1 water rescue was performed (no injuries were reported). Many roads flooded in the Felton Borough, and in Hopewell, Delta and Hanover Townships. A small mudslide was reported in Hopewell Township.
- Sullivan County, Pa. – Routes 34 and 234 in Biglerville were flooded, and runoff caused the flooding of several basements in this area. Hilltown Road in Franklin Township was also flooded.

6/17/04 Thunderstorms with heavy rain caused flash flooding in Columbia County, beginning in the Stillwater area, where a road was washed out and a mudslide occurred. In the Briar Creek area, just west of Berwick, some evacuations were required due to high water resulting from flash flooding. Flooding in the county mainly occurred between Bloomsburg and Berwick.

July

7/11/04 Heavy rain caused flooding in Bedford County, Pa. Many roads and basements flooded, and several water rescues were conducted.

7/12/04 Heavy rain over Perry County, Pa. caused flash flooding, mudslides and road closures. As much as 8 inches of rain in northern Maryland caused flash flooding in Cecil and Harford Counties that stranded vehicles, closed roads and flooded homes. There was extensive property damage to homes and businesses in the towns of Port Deposit and Havre de Grace.

7/14-15/04 Ten water rescues were necessary after heavy rain over northeast Lancaster County, Pa. caused flash flooding with extensive road and stream flooding. One building was damaged. Flood stage was exceeded on the Conestoga River in Lancaster. One road was reportedly washed out in Steelton, Dauphin County, Pa.

7/18/04 Heavy rain closed numerous roads in the Elkland area of Tioga County, Pa. Two homes suffered basement damage.

7/22-23/04 Thunderstorms with heavy rain produced flash flooding in the Harrisburg area of Dauphin County, Pa. Several roads were closed, several basements reportedly flooded, and multiple vehicles were stranded by high water.

7/27-28/04 A series of thunderstorms with heavy rain caused flooding in Lancaster County, Pa. Flooding was widespread, occurring along tributaries of the Conestoga River and Mill Creek. Many major and secondary roads were closed, and water rescues were conducted for residents stranded by high water. A rain event in the southern tier of New York caused flooding on the Chenango and Susquehanna Rivers. The Chenango River crested above flood stage at Sherburne.

7/31/04 A heavy rain in northcentral Pennsylvania caused flash flooding and road closures in Lycoming and Sullivan Counties. Several secondary roads were washed out. The second heavy rain event in less than a week caused flash flooding in Bradford County, Pa., where there were reports of basement flooding and flooded roadways.

August

8/1/04 Heavy rain caused flash flooding in several areas of Cumberland, Dauphin, Lancaster and York Counties in Pennsylvania. Several roads were closed and several homes suffered damage.

8/4/04 Heavy rain caused flash flooding in several areas of Lancaster and York Counties

in Pennsylvania, closing dozens of roads. Several rescues from stranded vehicles were reported in York County.

8/11/04 Thunderstorms produced flash flooding, damaging 2 businesses and 7 homes in McKean County, Pa. Several major roads were closed, and one car was swept away while trying to cross a flooded roadway. Although the area impacted by the flooding is not in the Susquehanna basin, the entire county benefits from the Susquehanna Flood Forecast and Warning System Improvements Program.

8/12-13/04 Remnants of Tropical Storm Bonnie and Hurricane Charley brought excessive moisture to the northeastern United States in mid-August. A related rain event in the Upper Susquehanna subbasin prompted the issuance of a flood warning in Cortland County, N.Y., where the Tioughnioga River at Cortland crested 2 inches below flood stage. Thunderstorms producing heavy localized rain caused flash flooding in several areas of the Lower Susquehanna Subbasin in Pennsylvania.

- Lancaster County, Pa. – Flooding of the Cocalico Creek caused evacuations in Cocalico Township. Thirty roads were closed.
- Lebanon County, Pa. – There were reports of several road closures and basements flooding; Newmanstown was hit particularly hard, with 5 feet of water on some streets.
- Schuylkill County, Pa. – Several roads in Summit Station were closed, and over 15 basements flooded.

8/20/04 Storms producing nearly 3 inches of rain over Union County caused creeks to overflow their banks and close roads. The Mifflinburg area was especially hard hit.

8/21-22/04 Heavy rain caused flash flooding in Lancaster County. Little Chickies Creek near Mount Joy and Chickies Creek near Manheim both topped their banks.

8/28/04 Up to 5 inches of rain fell over parts of Bedford County, causing flash flooding along the Frankstown Branch of the Juniata River. Twenty-five businesses were flooded along Main Street in Everett, which had 3 feet of water on it.

8/30/04 A stalled frontal system over northcentral Pennsylvania and the southern tier of New York caused flash flood damage to roads and bridges.

- Blair County, Pa. – Flash flooding closed roads and bridges and damaged 10 homes.
- McKean County, Pa. – Road closures and mudslides were reported.
- Steuben County, N.Y. – Areas in Steuben County received between 3 and 5 inches of rain causing moderate to severe flood damage totaling about \$2.5 million. Two trailer parks and several residences were evacuated. Many of the areas impacted by this flooding were also damaged by floods in July 2003 and May 2004.
- Tioga County, Pa. – Flash flooding caused road closures, flooded basements and road washouts. One water rescue was reported

September 9/8-10/04 The remnants of hurricane Frances brought heavy rains to central Pennsylvania and western New York. Flood stages were exceeded at many locations along the Juniata River in Pennsylvania, and minor flooding occurred in Chemung County, New York.

- Steuben County, N.Y. – Major flooding in the Tuscarora Creek watershed and the Canisteo River Basin caused road washouts and flooding of homes, following 3 to 6 inches of rainfall. A county bridge was destroyed. Countywide, the infrastructure damage from the August 30 and September 9 floods was estimated at \$10 million, with 75 residents requesting disaster assistance.
- Huntingdon County, Pa. – Rainfall totals ranging from 4 to 7 inches caused local streams to flood roadways and basements. Residents of several communities were evacuated.

9/18-19/04 A complex interaction between a strong, slow-moving cold front and the remnants of Hurricane Ivan produced heavy rainfall throughout the Susquehanna basin. Rainfall totals ranged from 1.5 inches in the northwest region of the basin to over 9 inches in the West Branch Susquehanna Subbasin. Some areas of the Juniata and Middle Susquehanna Subbasins received between 5 and 7 inches of rain. The southern tier of New York from Elmira to Binghamton received 4 to 5 inches of rain, and areas north of that measured 3 to 4 inches. Many areas were still saturated from the rainfall associated with the Frances event, and thus significant widespread moderate-to-major flooding occurred throughout the basin. Many locations throughout the basin exceeded flood stage, and several measured record high stages. Localized minor-to-moderate flooding occurred in Chemung, Chenango, Steuben and Tioga Counties in New York. Several flood control structures were in danger of being breached or failing in Cambria, Huntingdon and Montour Counties in Pennsylvania, prompting evacuations and emergency response. Thirty-seven counties falling partially or entirely in the Susquehanna Basin were declared federal disaster areas. Two drowning deaths were reported in central Pennsylvania. Moderate-to-major flooding occurred in the following counties:

- Bradford County, Pa. – More than half of the roads in the county were closed, including all major roads, and a state of emergency was declared. About 50 homes, 5 businesses and dozens of roads and bridges were damaged. Over 20 water rescues were conducted.
- Broome County, N.Y. – At least 100 homes suffered major damage with 1,000 or more receiving moderate damage. Flooding and evacuations forced over 1,000 people from their homes. Damages are estimated at more than \$2 million.
- Cameron County, Pa. – In addition to damage to private property, flooding caused extensive damage to public property such as roads and bridges. County estimates put the toll on public property in the county at nearly half a million dollars.
- Cecil County, Md. – Although the rain fall was much less in Maryland, runoff from the rest of the basin caused river flooding in the town of Port Deposit, damaging 27 homes and causing about \$1 million in damages.
- Centre County, Pa. – Overflowing streams flooded thousands of basements and destroyed 21 mobile homes. About 100 people were evacuated. Roads were closed throughout the county, including Interstate 80 and U.S. Routes 220 and 322. Record flood stage was recorded on Bald Eagle Creek. Water rescues occurred in Milesburg, Philipsburg and Coburn.
- Clinton County, Pa. – Flooding forced nearly 1,000 evacuations along the Susquehanna River and nearby streams. At least 500 homes and businesses were damaged. The dike and levee system protected Lock Haven from flood damage.

- Cumberland County, Pa. – River and stream flooding caused first-floor damage to homes and prompted evacuations. Many roads were closed; most bridges over the Conodoguinet Creek were closed.
- Dauphin County, Pa. – River flooding in Harrisburg caused the evacuation of about 2,000 people and destroyed 24 vehicles and 20 boats. Elsewhere in the county, small streams flooded basements, stranded motorists, and closed roads and businesses.
- Franklin County, Pa. – Flooded streams caused structure damage in several areas. About a dozen water rescues were performed, and many roads were closed.
- Fulton County, Pa. – Over 30 homes and businesses suffered significant damage from flooding streams. Eight bridges were washed out, and county roads suffered \$2 million to \$5 million in damages.
- Huntingdon County, Pa. – Concern about apparent leaks in the levee protecting Smithfield Village from the Juniata River prompted the evacuation of the town's residents. Other areas of the county were also evacuated due to rising waters and road closures.
- Juniata County, Pa. – The flooded Juniata River caused evacuations and damage to roads and bridges.
- Lackawanna County, Pa. – Almost 1,000 homes and more than 30 businesses were affected by flooding, contributing to estimates of around \$10 million in damages. Numerous roads and bridges suffered varying degrees of damage.
- Luzerne County, Pa. – Widespread flooding damaged 4,000 homes, dozens of businesses and the lower level of a hospital. Early damage estimates are at \$30 million.
- Lycoming County, Pa. – Some areas of the county received up to 7 inches of rain, prompting evacuation of over 400 homes along Lycoming Creek. Officials estimate that hundreds of homes were damaged by the flooding.
- Mifflin County, Pa. – The flooded Juniata River caused damage to homes and businesses, and heavy rains caused widespread local road closures.
- Montour County, Pa. – Evacuations were conducted in areas near Danville where levee leaks were reported.
- Northumberland County, Pa. – Two water rescues were reported; businesses were flooded and many major roads and bridges were closed.
- Perry County, Pa. – Flooding on Sherman Creek closed Creek Road and part of Route 34.
- Schuylkill County, Pa. – Schuylkill County received some of the highest rainfall totals observed in the Susquehanna basin, with as much as 9 inches of rain falling in the west. Flooding caused road closures, evacuations, power outages and downed trees.
- Snyder County, Pa. – The flooded Susquehanna River led to about 400 evacuations from the Isle of Que, Shady Nook and Monroe Township, and caused at least 1 water rescue. Many roads and bridges were closed due to high water and mudslides.

- Susquehanna County, Pa. – Four homes were destroyed while over 150 suffered moderate to major damage. Nearly 30 businesses were affected, and about 750 people were evacuated from their homes due to the threat of flash flooding. Damages are estimated to be at least \$3 million.
- Union County, Pa. – Over 400 homes were affected by flooding. Several water rescues were reported.
- Wyoming County, Pa. – Many major roads in the county were closed as a result of flooding and mudslides. Residents were evacuated from low-lying sections of Tunkhannock Township, Mehoopany, Laceyville and Meshoppen. Damage estimates stand at about \$5 million.

In addition to the above Pennsylvania counties, the following were also declared eligible for federal disaster relief: Bedford, Blair, Carbon, Chester, Clearfield, Columbia, Elk, Indiana, Jefferson, Lebanon, Potter, Sullivan, Tioga, Wayne and York Counties.

9/27-29/04 Remnants of Hurricane Jeanne, the 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. Minor flooding was caused in the Wyoming Valley region by rainfall totals in the range of 2 to 3 inches.

November 11/28-29/04 Heavy rain over the eastern part of the Susquehanna basin produced between 2 and 3 inches of rain, causing flooding in several counties in the Lower Susquehanna Subbasin. Moderate small stream flooding was reported in Schuylkill County, Pa., where a countywide flood warning was issued. The heavy rain also caused flooding on Swatara Creek at Harper Tavern, in Lebanon County, Pa.