

CHRONOLOGY OF DROUGHT IN THE DELAWARE RIVER BASIN

- August 8, 2001 Pennsylvania Department of Environmental Protection (PADEP) issues a drought watch for Lancaster, Lebanon, and Schuylkill counties.
- August 24, 2001 New York State Department of Environmental Conservation (NYSDEC) issues a drought watch that includes Broome and Chenango counties in the Delaware River Basin (DRB).
- PADEP moves Berks and Chester counties from normal to drought watch status.
- October 24, 2001 Combined storage in the New York City (NYC) Delaware reservoir system drops into the drought watch zone. Storage is now 109.820 billion gallons (bg), which is below the drought watch line of 110 bg for this date. Drought watch operations will be in effect if storage remains below the drought watch line for five consecutive days.
- October 29, 2001 Delaware River Basin Commission's (DRBC) drought watch operations are now in effect. The flow objectives at Montague and Trenton, New Jersey decrease to 1,655 cubic feet per second (cfs) and 2,700 cfs, respectively, and NYC diversions drop from 800 million gallons per day (mgd) to 680 mgd. Conservation releases from the NYC Delaware reservoirs are reduced to 85% of augmented experimental levels.
- October 30, 2001 New Jersey Department of Environmental Protection (NJDEP) issues a drought watch for the entire state.
- November 4, 2001 Combined storage in the NYC Delaware reservoir system drops into the drought warning zone and DRBC's drought warning operations are automatically put into effect (no five day waiting period). The flow objective at Montague decreases to 1,550 cfs and the flow objective at Trenton remains at 2,700 cfs. NYC and New Jersey diversions are reduced to 560 mgd and 70 mgd, respectively.
- November 5, 2001 NYSDEC moves six DRB counties from normal to drought watch status (Delaware, Greene, Orange, Schoharie, Sullivan, and Ulster).
- November 6, 2001 PADEP moves Chester, Lancaster, and Lebanon counties to drought warning status and places 10 other DRB counties under drought watch. A total of 12 DRB counties are now under drought watch (Berks, Bucks, Carbon, Delaware, Lehigh, Monroe, Montgomery, Northampton, Philadelphia, Pike, Schuylkill, and Wayne).

- November 21, 2001 NJDEP issues a drought warning for three of the six state drought management areas (Northwest, Southwest and Coastal South). The drought warning affects 13 of New Jersey's DRB counties.
- November 26, 2001 Cannonsville Reservoir falls to a record-low storage level of 3.25 bg, which is only 3.4% of usable capacity.
- Combined storage in the NYC Delaware reservoir system drops into the drought zone. Storage is only 69.267 bg and is below the drought line of 70 bg for this date. Drought operations will be in effect if storage remains below the drought line for five consecutive days.
- December 1, 2001 DRBC's drought operations are now in effect. The flow objectives at Montague and Trenton decrease to 1,350 cfs and 2,500 cfs, respectively. NYC and New Jersey diversions are reduced to 520 mgd and 65 mgd, respectively.
- December 5, 2001 PADEP moves 12 DRB counties from drought watch to drought warning (Berks, Bucks, Carbon, Delaware, Lehigh, Monroe, Montgomery, Northampton, Philadelphia, Pike, Schuylkill, and Wayne). A total of 15 DRB counties are now under drought warning in Pennsylvania. PADEP also moves Lackawanna and Luzerne counties from normal to drought watch status.
- December 6, 2001 NYSDEC moves six DRB counties from drought watch to drought warning status (Delaware, Greene, Orange, Schoharie, Sullivan, and Ulster).
- December 15, 2001 Combined storage in the NYC Delaware reservoir system drops to a record low level of 63.348 bg, or just 23.4% of capacity. This is more than 113 bg below normal storage levels for the date.
- December 18, 2001 During the last commission meeting of 2001, DRBC approves *Drought Emergency Resolution 2001-32* and declares a basinwide drought emergency. Under the emergency order, DRBC can call for releases from federal, state, and privately owned reservoirs to bolster flows in the Delaware River and its tributaries.
- December 19, 2001 DRBC *Resolution 2001-33* is enacted. The goal is emergency protection of the tailwaters fishery.
- December 26, 2001 The seven-day average, 250 parts per million chloride concentration location (also known as the "salt front") retreats to Delaware River mile 82 due to recent rains. Since the salt front is downstream of river mile 82.9, the Montague flow objective is further reduced to 1,100 cfs (as per the DRBC Drought Operating Plan [Resolution 83-13]). The Trenton flow objective remains at 2,500 cfs.

- December 27, 2001 The New York City Department of Environmental Protection (NYCDEP) issues a drought watch based on a less than 50% chance that either the Delaware or Catskill reservoir systems will be full by June 1.
- January 24, 2002 NJDEP expands the drought warning to include the Northeast and Northern Coast drought management areas. Five of the six New Jersey drought management areas are now under a drought warning.
- January 28, 2002 NYCDEP issues a drought warning citing less than a 33% chance that either the Delaware or Catskill reservoir systems will refill by June 1.
- February 1, 2002 The United States Army Corps of Engineers (USACOE) begins temporary storage of water in F.E. Walter Dam on the Lehigh River in Pennsylvania.
- February 12, 2002 Pennsylvania Governor Mark Schweiker signs a proclamation declaring a drought emergency for 15 DRB counties (Berks, Bucks, Carbon, Chester, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Philadelphia, Pike, Schuylkill, and Wayne).
- March 4, 2002 New Jersey Governor James McGreevey issues a statewide drought emergency.
- March 5, 2002 Delaware Governor Ruth Ann Minner issues a statewide drought warning.
- March 14, 2002 Pennsylvania Department of Conservation and Natural Resources cancels scheduled whitewater releases from Lake Nockamixon into Tohickon Creek in Bucks County due to drought emergency conditions. Releases had been scheduled for the weekend of March 16-17.
- March 26, 2002 New York City Mayor Michael Bloomberg declares a Stage 1 drought emergency, effective April 1.
- April 1, 2002 Combined storage in the NYC Delaware reservoir system has risen from the drought zone into the drought warning zone. Storage is now 135.913 bg and is above the drought operations line (134.106 bg on 4/1) for the first time since late-November 2001.
- May 3, 2002 Combined storage in the NYC Delaware reservoir system has risen from the drought warning zone into the drought watch zone. Storage is now 174.247 bg and is above the drought warning line (174 bg for 5/3) for the first time since early November.
- May 8, 2002 Pennsylvania Governor Schweiker announces the extension of the drought emergency in 20 counties for up to 90 additional days due to very low ground water levels. Twelve DRB counties are included in the extension (Berks, Bucks, Chester, Delaware, Lancaster, Lebanon, Lehigh, Montgomery,

- Northampton, Philadelphia, Schuylkill, and Wayne). In addition, three DRB counties are moved to drought watch status due to improved conditions (Monroe, Carbon, and Pike).
- May 9, 2002 NYSDEC moves two DRB counties, Broome and Chenango, from drought watch to normal status due to improved conditions. Six DRB counties remain under drought warning (Delaware, Greene, Orange, Schoharie, Sullivan, and Ulster).
- May 15, 2002 Combined storage in the NYC Delaware reservoir system is within the normal operations zone. Storage is now 190.992 bg and is above the drought watch line (190 bg for 5/15) for the first time since late-October 2001. Storage must rise to at least 15 bg above the drought watch line and remain there for five consecutive days for the basin to return to normal operations.
- May 21, 2002 Combined storage in the NYC Delaware reservoir system (206.776 bg) is now more than 15 bg above the drought watch line of 190 bg for this date. The five-day countdown to normal operations begins.
- May 26, 2002 This marks the fifth consecutive day that combined NYC Delaware reservoir storage (214.030 bg) is 15 bg or more above the drought watch line (190 bg for 5/26). The Delaware River Basin officially returns to normal operations. Normal flow objectives at Montague and Trenton resume (1,750 cfs and 3,000 cfs, respectively). Normal NYC and New Jersey diversions also resume -- 800 mgd and 100 mgd, respectively.
- May 28, 2002 Combined storage in the NYC Delaware reservoir system (216.432 bg) is now more than 25 bg above the drought watch line of 190 bg for this date. After remaining 25 bg or more above the drought watch line for 15 consecutive days, the conservation releases from Pepacton, Cannonsville, and Neversink reservoirs will be increased from the Basic Release Schedule to the Augmented Experimental Conservation Release Schedule (DRBC *Docket D-77-20 CP [revised]*).
- June 8, 2002 Combined storage in the NYC Delaware reservoir system (231.088 bg) is more than 40 bg above the drought watch line of 190 bg for this date. When the storage is 40 bg or more above the drought watch line for at least 30 consecutive days, the DRBC may consider terminating the drought emergency.
- June 12, 2002 Combined storage in the NYC Delaware reservoir system (235.997 bg) remained at least 25 bg above the drought watch line (190 bg for 6/12) for the past 15 consecutive days. Conservation releases for Pepacton, Cannonsville, and Neversink reservoirs increase to the Augmented Experimental Conservation Release Schedule.

- June 13, 2002 NYSDEC moves six DRB counties from drought warning to drought watch status (Delaware, Greene, Orange, Schoharie, Sullivan, and Ulster).
- June 14, 2002 Pennsylvania Governor Schweiker moves three DRB counties from drought emergency to drought warning (Bucks, Montgomery, and Philadelphia). Wayne County is moved from drought warning to drought watch status and Lackawanna County is moved from drought watch to normal status. Eight DRB counties remain under drought emergency and mandatory water use restrictions (Berks, Chester, Delaware, Lancaster, Lebanon, Lehigh, Northampton, and Schuylkill).
- June 20, 2002 NJDEP eases statewide water use restrictions and allows, for the first time since the drought emergency was declared in March, lawn watering in the Northeast drought region (Morris Co. is the only DRB county in this region).
- July 8, 2002 Marks the 30th consecutive day that NYC Delaware reservoir combined storage is 40+ bg above the drought watch line. The DRBC Water Code specifies that the Commission may choose to terminate the drought emergency at this time.
- July 9, 2002 DRBC Commissioners unanimously decide to continue the drought emergency status.
- July 16, 2002 Philadelphia Suburban Water (PSW) is granted an exemption to the drought emergency by PADEP. The exemption applies to some of PSW's customers in Delaware County and is based on the determination that PSW has adequate water supplies in its reservoirs.
- July 17, 2002 At the July 17 Commission meeting, DRBC decides to continue its drought emergency for at least another 30 days.
- August 2, 2002 Delaware issues a drought emergency for northern New Castle County (area above C&D Canal) based on 13-month rainfall deficits of 20 inches and below-normal freshwater supplies.
- August 6, 2002 DRBC commissioners hold a telephone conference and unanimously agree to continue the drought emergency until October 16, 2002, with the option to terminate the emergency prior to this date if hydrologic conditions improve sufficiently. This action is to be ratified at the next public meeting.
- August 7, 2002 Marks the 60th consecutive day that NYC Delaware reservoir combined storage is 40+ bg above the drought watch line. The drought emergency would have been terminated if not for the unanimous agreement by DRBC commissioners on August 6 to continue the emergency through October 16, 2002.

- August 9, 2002 Pennsylvania extends the drought emergency for eight basin counties (Berks, Chester, Delaware, Lancaster, Lebanon, Lehigh, Northampton, and Schuylkill).
- August 20, 2002 New Jersey increases drought restrictions once again: no lawn watering permitted and restrictions on car washing.
- September 5, 2002 PADEP moves three DRB counties (Bucks, Montgomery, and Philadelphia) from drought warning to drought emergency. These three counties had previously been moved from drought emergency to drought warning on June 14 because of improving hydrologic conditions at that time. Lackawanna County is moved from normal status (which it was moved to on June 14) to drought watch status.
- October 11, 2002 Delaware lifts mandatory drought restrictions for northern New Castle County above the C&D Canal due to improved streamflows and ground water from recent rains. The entire state remains under a drought warning.
- October 16, 2002 During the Commission meeting, DRBC unanimously agrees to continue the drought emergency until November 25, 2002, with the option to terminate the emergency prior to this date if hydrologic conditions improve sufficiently.
- October 26, 2002 Combined storage in the NYC Delaware reservoirs increases to 153.007 bg, or 0.417 bg above the median level. This is the first time since April 2001 that reservoir storage levels are above the median.
- October 30, 2002 NYC Mayor Bloomberg announces the lifting of Stage 1 Drought Emergency restrictions that had been in effect in the city since April 1, 2002. Effective November 1, NYC will be downgraded to a drought watch.
- November 1, 2002 First day NYC is operating under drought watch status.
- November 7, 2002 PADEP lifts the drought emergency in nine DRB counties as a result of above-average rainfall during September and October. Berks, Bucks, Lancaster, Lehigh, Montgomery, Northampton, and Philadelphia counties have all been moved from drought emergency to drought warning status. Lebanon has been moved from drought emergency to drought watch, and Schuylkill County has been moved from drought emergency to normal status. In addition, six counties have been moved from drought watch to normal status: Carbon, Lackawanna, Luzerne, Monroe, Pike, and Wayne. Due to continuing low ground water levels, Chester and Delaware counties remain under a drought emergency.
- November 8, 2002 Commissioners agree via a telephone conference to allow the basinwide drought emergency to expire on November 25 and to adopt a resolution to that effect at the public meeting on that date. Following consultation with

the DRBC executive director and with her concurrence, the USACOE begins lowering water levels at the Francis E. Walter Dam from 1,370 feet to its normal 1,300 feet. The lowering is a result of improved hydrologic conditions and adequate water supplies at Beltzville Lake and Blue Marsh Lake. Water is to be released at an average of 750 to 1,000 cfs-days until the normal level is reached by the end of December 2002.

November 14, 2002 NJDEP lifts water-use restrictions for the northern part of the state (Northeastern, Northwestern, and Central drought regions) as a result of recent rains and conservation efforts. Residents in this part of the state are allowed to wash cars or water lawns any day of the week and restaurants may serve water without being asked. Due to depleted aquifers in the southern portion of the state (Coastal North, Coastal South, and Southwest drought regions), mandatory state-imposed water restrictions remain in effect for all of Monmouth and Ocean counties, parts of Mercer County and all counties to their south. With rainfall still seven inches below normal for the year, the statewide drought emergency remains in place.

On November 14, NYSDEC lifts the drought watch for six of the eight New York counties located partially or totally within the DRB (Delaware, Greene, Orange, Schoharie, Sullivan, and Ulster). As a result, all eight of the New York counties located in the DRB are now designated as having normal conditions. NYC remains under a drought watch (in effect since November 1).

November 25, 2002 The DRBC adopts Resolution 2002-31 ending its drought emergency.

December 19, 2002 As a result of improved hydrologic conditions, PADEP lifts the drought emergency in the remaining two DRB counties, Delaware and Chester. Both counties are placed under a drought watch.

The drought status for seven basin counties previously under a drought warning also has been changed. Berks and Lancaster counties are now in a drought watch and Bucks, Lehigh, Montgomery, Northampton, and Philadelphia counties have returned to normal status. Finally, Lebanon County, previously under a drought watch, also has been designated as normal.

January 3, 2003 NYCDEP Commissioner Christopher Ward declares an end to the city's drought watch that had been in effect since November 1, 2002, due to above-normal precipitation from September through the end of the year and the resulting increase in reservoir levels.

January 8, 2003 New Jersey Governor McGreevey lifts the statewide drought emergency that had been in effect since March 2002. Recent abundant rainfall has replenished New Jersey's surface waters and increased ground water levels. However, since ground water levels in the southern portion of the state still remain below

normal, two southern drought management regions -- Coastal South and Southwest --remain under a drought warning.

The last four counties still under a drought watch in the Pennsylvania portion of the basin (Chester, Delaware, Berks, and Lancaster) are returned to normal status as a result of the abundant rainfall over the past several months that has improved hydrologic conditions. All Pennsylvania DRB counties are now in normal status.

January 29, 2003 Delaware Governor Minner lifts the statewide drought warning. Precipitation in Delaware has been significantly above normal from October through December 2002, bringing streamflows and ground water to normal or above-normal levels.

March 21, 2003 New Jersey Governor McGreevey lifts the drought warning for the two southern drought management regions, Coastal South and Southwest. All of New Jersey is now in normal status.

All counties within the Delaware River Basin are now in normal status.

