

## **Drought Report September 6, 2016**

### **Preface**

This report summarizes the various indicators utilized in drought monitoring. Each parameter (groundwater, surface water, precipitation, and palmer index) has their own individual indicator for each county. When readings hit a pre-determined trigger level, the indicator is coded as “Normal”, “Watch”, “Warning”, or “Emergency” for that county. These indicators are used to evaluate the drought status of a particular county; they are not, themselves drought declarations. Drought declarations are determined by the Commonwealth Drought Coordinator, with support of the Drought Task Force, and given final approval by the Governor.

### **Summary**

On September 6<sup>th</sup>, the Department issued a drought watch declaration for four more Pennsylvania counties – Chester, Cumberland, Delaware and Philadelphia – due to low stream flows, declining groundwater levels and lack of precipitation. The declaration, which brings the number of counties under drought watch to 38 -- was made following the September 6th meeting of members of the Commonwealth’s Drought Task Force.

Below normal precipitation across most of the state has resulted in instantaneous stream flows declining across the state with the lowest flows occurring the Susquehanna and Delaware River Basins. Precipitation departures increased during the last 7 days as minimal rainfall occurred except in the northwestern part of the state. Rainfall departures increased by as much as 1.7 inches in Bedford County as the departure went from -1.6 to -3.3 in one week. Groundwater levels improved in 2 counties and 2 counties decreased from “Normal” to “Watch” in 2 counties over the last seven days.

7-day forecasts call for little precipitation that would substantially reduce precipitation deficits, recharge groundwater or provide for sustained stream flows. Approximately 0.1 to 1.5 inches of precipitation is expected with highest rainfall amounts to occur in the northwest corner of the state and lowest in the southeast.

With the recent drought declaration, Potter County remains in Drought Warning with the following counties in Drought Watch: Armstrong, Bedford, Berks, Blair, Bradford, Cameron, Carbon, Center, Chester, Clarion, Clearfield, Clinton, Cumberland, Dauphin, Elk, Forest, Fulton, Huntingdon, Indiana, Jefferson, Juniata, Lawrence, Lebanon, Lehigh, Lycoming, McKean, Mercer, Mifflin, Northampton, Perry, Philadelphia, Schuylkill, Snyder, Sullivan, Tioga, Union, and Venango.

A Commonwealth Drought Task Force meeting is being planned for early October on a date yet to be determined.

### **Drought Report Details**

*Precipitation* –Over the last 7 days, there was varying precipitation across the state, county average rainfall was from 0.0 to 1.6 inches for the period August 29 to September 4. The more significant rainfall occurred in 2 counties in the northwestern tier of the state. The 90-day precipitation deficit shows counties ranging from greater than 50% below up to 25% above normal precipitation.

The precipitation indicators based on a 90-day departure are showing 18 counties in “Watch” (Adams, Bedford, Blair, Butler, Clearfield, Cumberland, Delaware, Fulton, Huntingdon, Lawrence, Lycoming, Montgomery, Northumberland, Perry, Philadelphia, Sullivan, Union and Venango) 8 counties in “Warning” (Cameron, Centre, Clinton, Juniata, Mifflin, Potter, Snyder and Tioga) and no counties in “Emergency” status. There was no improvement in any of the counties for precipitation.

*Surface Water*- Instantaneous streamflow across the Commonwealth ranged from normal to much below normal. For this date there are 25 gages with instantaneous flow at less than the 10th percentile, compared to 19 gages last week. Three gages were recording record low instantaneous flows.

The 30-day running average streamflow indicators are showing 18 counties in drought “Watch” (Adams, Berks, Carbon, Chester, Clinton, Cumberland, Delaware, Franklin, Fulton, Huntingdon, Lehigh, Mercer, Northumberland, Perry, Snyder, Tioga, Union and York), one county in “Warning” (Northampton) and one county in “Emergency” (Philadelphia). Since our last report, 2 counties showed improvement with one county returning to “Normal”.

*Groundwater* – The 30-day moving average indicators for groundwater levels are showing 20 counties in drought “Watch” (Bedford, Berks, Carbon, Chester, Clinton, Cumberland, Delaware, Elk, Erie, Franklin, Fulton, Lackawanna, Lancaster, Lehigh, Monroe, Montour, Northampton, Philadelphia, Pike and Union); 4 counties in “Warning” (Dauphin, Lebanon, McKean and Potter) and 2 counties in “Emergency” (Lawrence and Mercer). Since our last report, 2 counties showed improvement returning to “Normal”.

*Palmer Drought Severity Index* – The Palmer soil moisture indicator is showing 28 counties in “Watch” (Berks, Bradford, Bucks, Cameron, Centre, Chester, Clearfield, Clinton, Columbia, Dauphin, Delaware, Elk, Juniata, Lancaster, Lebanon, Lycoming, Mifflin, Montgomery, Montour, Northumberland, Perry, Philadelphia, Snyder, Sullivan, Susquehanna, Tioga, Union and Wyoming) and 26 counties in “Warning” (Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Clarion, Crawford, Erie, Fayette, Forest, Fulton, Greene, Huntingdon, Indiana, Jefferson, Lawrence, McKean, Mercer, Potter, Somerset, Venango, Warren, Washington and Westmoreland). Fourteen counties declined from “Normal to “Watch status in the past week.

*Public Water Supply Agencies (PWSA 's)* – The following water suppliers are on water use restrictions:

Albion Borough Water System, Erie County  
Bedford Borough Water Authority, Bedford County  
Dubois Water Department, Clearfield County  
Galeton Borough Water Authority, Potter County  
Huntingdon Borough Water Department, Huntingdon County  
Petersburg Commons Water System, Huntingdon County  
Shinglehouse Borough Water Department, Potter County  
Wellsboro Municipal Authority, Tioga County

*Forecast* – The 7-day forecast indicates approximately 0.1 to 1.5 inches of precipitation for the state, with the highest rainfall amounts forecasted to be in the northwest corner of the state.

