

## **Drought Report September 13, 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**

Below normal precipitation across the central and eastern portion of the state has resulted in instantaneous stream flows declining in the Susquehanna and Delaware River Basins. Normal to above normal flows are present in western Pennsylvania where rainfall was above normal. Precipitation departures increased during the last 7 days in the southeast where there was no rainfall recorded in 5 southeastern counties. In Delaware County, for example, the departure increased from -3.5 to -4.0 inches. In the western Pennsylvania rainfall was significant enough to improve departures by as much as 2.5 inches where Butler County improved from -3.3 to -0.8 inches. Groundwater levels improved in 2 counties to “Normal” and 1 county decreased from “Normal” to “Watch” over the last seven days.

7-day forecasts call for minimal precipitation-approximately 0.5 to 1.25 inches is expected with highest rainfall amounts to occur in northeast corner of the state and lowest in the southwest. With a lack of precipitation, groundwater levels and stream flow levels would be expected to decrease.

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 6<sup>th</sup> meeting of members of the Commonwealth’s Drought Task Force.

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.

The next Commonwealth Drought Task Force meeting is scheduled for October 5<sup>th</sup> at PEMA.

### **Drought Report Details**

*Precipitation* –Over the last 7 days, there was varying precipitation across the state, county average rainfall was from 0.0 in 5 southeastern counties to 3.6 inches for the period September 5 to September 11. The more significant rainfall occurred in the middle and upper Ohio River Basin counties. The 90-

day precipitation deficit shows counties ranging from greater than 50% below up to 50% above normal precipitation.

The precipitation indicators based on a 90-day departure are showing 14 counties in “Watch” (Bedford, Blair, Clearfield, Delaware, Huntingdon, Lycoming, Montgomery, Northampton, Northumberland, Philadelphia, Potter, Sullivan, Tioga and Union) 6 counties in “Warning” (Cameron, Centre, Clinton, Juniata, Mifflin and Snyder) and no counties in “Emergency” status. There was improvement in 9 counties for precipitation.

*Surface Water*- Instantaneous streamflow across the Commonwealth ranged from normal to much below normal. For this date there are 17 gages with instantaneous flow at less than the 10th percentile, compared to 25 gages last week. Five gages were recording record low instantaneous flows.

The 30-day running average streamflow indicators are showing 15 counties in drought “Watch” (Adams, Berks, Carbon, Chester, Clinton, Cumberland, Delaware, Franklin, Huntingdon, Lehigh, Northumberland, Snyder, Tioga, Union and York), 2 counties in “Warning” (Fulton and Northampton) and one county in “Emergency” (Philadelphia). Since our last report, 2 counties showed improvement in returning to “Normal”.

*Groundwater* – The 30-day moving average indicators for groundwater levels are showing 17 counties in drought “Watch” (Bedford, Carbon, Chester, Clinton, Cumberland, Delaware, Elk, Erie, Franklin, Fulton, Lackawanna, Lancaster, Monroe, Montour, Philadelphia, Pike and Union); 7 counties in “Warning” (Berks, Dauphin, Lebanon, Lehigh, McKean, Northampton and Potter) and 2 counties in “Emergency” (Lawrence and Mercer). Since our last report, no counties showed improvement.

*Palmer Drought Severity Index* – The Palmer soil moisture indicator is showing 42 counties in “Watch” (Berks, Bradford, Bucks, Carbon, Chester, Clarion, Columbia, Crawford, Dauphin, Delaware, Erie, Forest, Jefferson, Juniata, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Lycoming, McKean, Mercer, Mifflin, Monroe, Montgomery, Montour, Northampton, Northumberland, Perry, Philadelphia, Pike, Potter, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Venango, Warren, Wayne and Wyoming) and 26 counties in “Warning” (Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Cameron, Centre, Clearfield, Clinton, Elk, Fayette, Fulton, Greene, Huntingdon, Indiana, Lawrence, Somerset, Washington and Westmoreland). Ten counties showed improvement from the last report with 12 counties declining.

*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 0.25 to 1.25 inches of precipitation for the state, with the highest rainfall amounts forecasted to be in the northeast corner of the state.

