

## **Drought Report November 9, 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**

Current drought indicators in eastern and central counties reflect the effect of prolonged below average precipitation with many streams running at or below the 10<sup>th</sup> percentile range and a number of groundwater monitoring wells at emergency status levels. In the past week Pennsylvania’s received rainfall ranging from 0.0 inches most of the southcentral and eastern counties to only 0.5 inches in Erie County. With only maximum of tenths of an inch of precipitation forecast over the next 7 days, conditions will likely continue to degrade.

The 90-day precipitation departures ranged from below normal in the south central and eastern part of the state to greater than 75% above normal in some western counties. Departures ranged from -5.7 inches in Bucks County to +9.8 inches in Jefferson County.

Groundwater levels are declining in the Delaware River Basin counties and middle Susquehanna River Basin counties. One monitoring well returned to “Normal” status with 13 wells moving to drought or a higher status.

Instantaneous flows ranged from near normal to much above normal in the western part of the state with much below normal flows in the eastern part of the state.

The Delaware River Basin Commission (DRBC) continues to direct releases when necessary from Beltzville and Blue Marsh reservoirs for streamflow augmentation at the Delaware River at Trenton gage. The salt front is at RM 88 which is 18 miles upstream of the normal for this time of year. The DRBC is scheduled to hold a public hearing on November 9<sup>th</sup> to discuss a probable drought declaration in some portion of the Delaware Basin.

The 7-day forecast calls for rainfall ranging from 0.01 inch in most of the Susquehanna River Basin to 0.10 inches in the Ohio and Delaware River Basins.

## **Drought Report Details**

*Precipitation* – Over the last 7 days, county rainfall averages ranged from 0.0 inches in the most of the Susquehanna and Delaware River Basin to 0.5 inches in the northwest Ohio River Basin. The 90-day precipitation deficit shows counties ranging from 50% below to greater than 75% above normal precipitation.

The precipitation indicators based on a 90-day departure indicate 13 counties are now in “Watch” (Chester, Dauphin, Delaware, Franklin, Juniata, Lancaster, Lehigh, Monroe, Northumberland Perry, Pike, Snyder and York), 3 counties are in “Warning” (Montgomery, Northampton and Philadelphia) and 1 county in “Emergency” (Bucks).

Since the last report there was 2 counties improved from “Warning” to “Watch” status.

*Surface Water*- Instantaneous streamflow across the Commonwealth ranged from high to below normal with the lowest flows in the Delaware River Basin. For this date there were 39 gages with instantaneous flow at less than the 10th percentile, compared to 22 gages last week. There were 3 gages recording record low instantaneous flows.

The 30-day running average streamflow indicators a renewed decline in streamflow with 16 counties in drought “Watch” (Carbon, Chester, Dauphin, Delaware, Fulton, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, Mifflin, Monroe, Northumberland, Schuylkill, Sullivan and Wayne), 7 counties in “Warning” (Adams, Cumberland, Franklin, Huntingdon, Perry, Philadelphia and York) and 5 counties in “Emergency” (Berks, Juniata, Northampton, Snyder and Union). Since our last report 2 counties improved and 10 counties moved to a lower status.

*Groundwater* – The 30-day moving average indicators for groundwater levels are showing 20 counties in drought “Watch” (Adams, Bedford, Bucks, Centre, Chester, Columbia, Cumberland, Delaware, Franklin, Fulton, Juniata, Lancaster, Luzerne, Mifflin, Montgomery, Perry, Philadelphia, Susquehanna, Wayne and York); 3 counties in “Warning” (Montour, Schuylkill and Union) and 9 counties in “Emergency” (Berks, Carbon, Dauphin, Lackawanna, Lebanon, Lehigh, Monroe, Northampton and Pike). Since our last report, 1 county improved and returned to “Normal” and 13 counties moved to a lower status.

*Palmer Drought Severity Index* – The Palmer soil moisture indicator is showing 43 counties in “Watch” (Allegheny, Armstrong, Beaver, Bedford, Berks, Blair, Bucks, Butler, Cambria, Carbon, Chester, Columbia, Dauphin, Delaware, Fayette, Fulton, Greene, Huntingdon, Indiana, Juniata, Lackawanna, Lancaster, Lawrence, Lebanon, Lehigh, Luzerne, Lycoming, Mifflin, Monroe, Montgomery, Montour, Northampton, Northumberland, Perry, Philadelphia, Pike, Schuylkill, Snyder, Somerset, Union, Washington, Wayne and Westmoreland) and no counties in “Warning” or “Emergency”.

*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  
Galeton Borough Water Authority, Potter County

Huntingdon Borough Water Department, Huntingdon County  
Jay Township, Elk County  
Petersburg Commons Water System, Huntingdon County  
Shinglehouse Borough Water Department, Potter County  
Wellsboro Municipal Authority, Tioga County

Dubois Water Company reported that it had lifted mandatory water restrictions as of October 24, 2016.

*Forecast* – The 7-day forecast indicates approximately 0.1 inches of rain will occur in the southeast to 0.75 inches in the northwest.

