

## **Drought Report October 20, 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**

This past week was again dry in the eastern portion of the state without sufficient rainfall to bring a positive change to the status of most county indicators. Average rainfall for the period October 11-17 ranged from 0.0 inches in several eastern counties to 1.5 inches in the northwest part of the state.

The 90-day precipitation departures ranged from below normal in the central and eastern part of the state to above normal in the west. Departures ranged from -3.7 inches in Monroe County to +6.5 inches in Washington County.

Groundwater levels continue to decline at various rates based on geology. Three monitoring wells returned to “Normal” status with 6 wells moving to drought or a higher status.

Instantaneous flows on most streams continue to decline across the state with the lowest flows in the east and highest in the southwest.

The Delaware River Basin Commission (DRBC) reports that flows in the central and upper Delaware Basin range from normal to much below normal. The salt front moved up stream one mile to River Mile 84. DRBC continues to direct releases from Beltzville and Blue Marsh reservoirs for streamflow augmentation.

In the Susquehanna, releases are being made at from Whitney Point for flow augmentation on the Susquehanna River.

The 7-day forecast calls for much welcome rainfall ranging from 0.1 inches in the southeast to 3.5 inches in the northwest. Disappointingly, the depths of rainfall are forecast to be the least in the Pennsylvania portion of the Delaware Basin which is experiencing extremely low stream flows and groundwater levels.

The next meeting of the Commonwealth Drought Task Force was rescheduled from October 19<sup>th</sup> to November 2<sup>nd</sup> at PEMA at which time any changes to the drought declaration will be discussed.

## **Drought Report Details**

There have been no changes to the declared drought counties. 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 counties will be reviewed for any further action during the next Drought Task Force meeting.

*Precipitation* – Over the last 7 days, county rainfall averages ranged from 0.0 inches in the eastern part of the state to 1.5 inches in the northwest. The 90-day precipitation deficit shows counties ranging from 25% below to 75% above normal precipitation.

The precipitation indicators based on a 90-day departures indicates counties are now in “Watch” (Monroe, Northumberland and Snyder).

*Surface Water*- Instantaneous streamflow across the Commonwealth ranged from normal to below normal with the lowest flows in the Delaware River Basin. For this date there were 41 gages with instantaneous flow at less than the 10th percentile, compared to 19 gages last week. There were 3 gages recording record low instantaneous flows.

The 30-day running average streamflow indicators are gradually declining with 14 counties in drought “Watch” (Bradford, Cameron, Carbon, Clinton, Erie, Forest, Lehigh, McKean, Monroe, Philadelphia, Potter, Snyder, Tioga and Union) and 1 county in “Emergency” (Northampton). There are no counties in “Warning”. Since our last report 3 counties entered lower stages.

*Groundwater* – The 30-day moving average indicators for groundwater levels are showing 25 counties in drought “Watch” (Bedford, Bradford, Bucks, Cambria, Centre, Chester, Clinton, Columbia, Cumberland, Dauphin, Fayette, Franklin, Fulton, Indiana, Lancaster, Lebanon, Luzerne, Montgomery, Montour, Schuylkill, Somerset, Sullivan, Union, Westmoreland and Wyoming); 7 counties in “Warning” (Berks, Carbon, Lackawanna, Lehigh, Monroe, Northampton and Pike) and 4 counties in “Emergency” (Lawrence, McKean, Mercer and Potter). Since our last report, 3 counties returned to “Normal” and 8 counties moved to a lower status.

*Palmer Drought Severity Index* – The Palmer soil moisture indicator is showing 29 counties in “Watch” (Bedford, Blair, Bradford, Cambria, Cameron, Centre, Clearfield, Clinton, Columbia, Elk, Fulton, Huntingdon, Juniata, Lackawanna, Luzerne, Lycoming, Mifflin, Monroe, Montour, Northumberland, Perry, Pike, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne and Wyoming) and 21 counties in “Warning” (Allegheny, Armstrong, Beaver, Butler, Clarion, Crawford, Erie, Fayette, Forest, Greene, Indiana, Jefferson, Lawrence, McKean, Mercer, Potter, Somerset, Venango, Warren, Washington and Westmoreland). There are no counties in “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  
Dubois Water Department, Clearfield 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

*Forecast* – The 7-day forecast indicates approximately 0.1 inches in the southeast to 3.5 inches of precipitation in the northwest.

