

## Drought Report

June 2, 2015

**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.**

### Drought Report

*Precipitation* – Over the past week, the majority of the state received less than 2.0 inches of precipitation, with totals varying from 0.1 to 3.0 inches across the state. The 90-day precipitation deficits are ranging from 1.1 to 4.6 inches for the southcentral and eastern portions of the state.

The precipitation indicators based on a 90-day departure have improved in the previous week: 15 counties in Drought “Watch” (Blair, Bucks, Carbon, Huntingdon, Juniata, Lackawanna, Luzerne, Mifflin, Montgomery, Northampton, Northumberland, Perry, Pike, Snyder, and Union), 2 counties in Drought “Warning” (Franklin and Monroe) and zero counties in Drought “Emergency”. The following changes have occurred from last week: Berks, Columbia, Cumberland, Montour, Schuylkill, Wayne, and Wyoming from “Watch” to “Normal”; Lehigh from “Warning” to “Normal”; Juniata, Lackawanna, Luzerne, Northampton, and Pike from “Warning” to “Watch”; Carbon from “Emergency” to “Watch”; and Monroe from “Emergency” to “Warning”.

*Surface Water*- Instantaneous streamflow varies across the Commonwealth with most gages at or above normal flow, with the exception of the south-central and southwestern portions of the state. For this date there are 9 gages with instantaneous flow at less than the 10th percentile, compared to 105 gages in this category as of last week.

The 30-day running average streamflow values show an overall decline from the previous week, with 19 counties moving into a more severe status and only 3 counties moving to a less severe status. The indicators are as follows: 38 counties in Drought “Watch” (Adams, Armstrong, Beaver, Bedford, Berks, Blair, Bradford, Bucks, Butler, Clarion, Clearfield, Columbia, Dauphin, Delaware, Elk, Forest, Indiana, Jefferson, Juniata, Lancaster, Lawrence, Lebanon, Lehigh, Lycoming, McKean, Montgomery, Montour, Northampton, Northumberland, Schuylkill, Snyder, Somerset, Sullivan, Susquehanna, Union, Westmoreland, Wyoming, and York), 11 counties in Drought “Warning” (Cameron, Centre, Clinton, Cumberland, Fayette, Greene, Mifflin, Perry, Potter, Washington, and Wayne) and 10 counties in Drought “Emergency” (Carbon, Chester, Franklin, Huntingdon, Lackawanna, Luzerne, Monroe, Philadelphia, Pike, and Tioga). The remaining 8 counties are in “Normal” status. The following changes have occurred since the last report: Crawford and Venango from “Watch” to “Normal”; Lancaster from “Warning” to “Watch”; Bedford, Northumberland, Snyder, and Union from “Normal” to “Watch”; Centre, Clinton, Cumberland, Fayette, Greene, Mifflin, Perry, Potter, and Washington from “Watch” to “Warning”; Franklin, Huntingdon, and Tioga from “Watch” to “Emergency”; and Lackawanna, Luzerne,

and Pike from “Warning” to “Emergency”. The 30-day average values for streamflow shown on the gage graphs continue to show a decrease in the 30-day average flow.

*Groundwater* – The 30-day moving average indicators for groundwater levels show a decline from the previous week, with 16 counties moving into a more severe status. The indicators are as follows: 19 counties in drought “Watch” (Adams, Cambria, Carbon, Centre, Chester, Columbia, Dauphin, Delaware, Elk, Indiana, Lancaster, Lebanon, Luzerne, Mifflin, Philadelphia, Sullivan, Westmoreland, Wyoming, and York), 6 counties in drought “Warning” (Bedford, Berks, Fulton, Lawrence, Mercer, and Schuylkill), and 9 counties in drought “Emergency” (Juniata, Lackawanna, McKean, Monroe, Perry, Pike, Potter, Susquehanna, and Wayne). The following changes have occurred since the last report: Carbon, Centre, Chester, Elk, Lancaster, Mifflin, Sullivan, and Wyoming from “Normal” to “Watch”; Bedford, Berks, Fulton, and Schuylkill from “Watch” to “Warning”; Juniata and Perry from “Watch” to “Emergency”; and McKean and Potter from “Warning” to “Emergency”. Real-time data is showing lower groundwater levels than the 30-day moving average, and subsequently, we expect to see the 30-day moving averages continue to drop for many counties in the coming weeks.

*Palmer Drought Severity Index* – The Palmer soil moisture indicator is displaying a decline from the previous week, with 9 additional counties moving from “Normal” to “Watch” status. The 28 counties in “Watch” are as follows: Berks, Bucks, Carbon, Chester, Clarion, Crawford, Dauphin, Delaware, Erie, Forest, Jefferson, Lackawanna, Lancaster, Lebanon, Lehigh, Luzerne, McKean, Mercer, Monroe, Montgomery, Northampton, Philadelphia, Pike, Potter, Schuylkill, Venango, Warren, and Wayne. There are no counties in “Warning” or “Emergency” for this date.

*Public Water Supply Agencies (PWSAs)* – Matamoras Borough in Pike County has informed DEP that their system has hit Stage 1, as defined in their Drought Contingency Plan, warranting a 5% voluntary reduction in water use. There are no other PWSAs on voluntary or mandatory restrictions at this time.

*Forecast* – The 7-day forecast indicates approximately 0.66 to 2 inches of precipitation for the state, with the highest rainfall amounts in the central portion of the state. The 8 to 14-day forecast indicates 1.5 to 5 inches of precipitation for the state, with highest rainfall totals in the central portion of the state.

*Summary* – Overall conditions have declined from the previous week, although precipitation deficits are showing improvement. Instantaneous streamflows have improved statewide, with the lowest streamflows in the south-central and southwestern portions of the state. The 30-day moving average streamflow indicators have declined from the previous week, with 19 counties moving into a more severe status and only 3 counties showing improvement. The precipitation deficit shows improved conditions from the previous week in regards to the 90-day departure for precipitation, with 15 counties improving to a better status. The 30-day moving average groundwater well levels show a decline from the previous week with 16 counties moving to a more severe status and zero counties showing improvement. Real-time data is showing lower groundwater levels than the 30-day moving average, and subsequently, we expect to see the 30-day moving averages continue to drop for many counties in the coming weeks. Continued precipitation in frequency and duration will be necessary in order for groundwater levels to recover to normal status.

DEP issued a press release on Mar. 24, 2015 for a drought watch declaration for 27 counties implementing the Drought Task Force recommendations from Mar. 10, 2015. The 27 counties in drought watch are: Berks, Bradford, Cambria, Carbon, Clinton, Columbia, Indiana, Lackawanna, Lawrence, Luzerne, Lycoming, McKean, Mercer, Monroe, Montour, Northumberland, Pike, Potter, Schuylkill, Snyder, Sullivan, Susquehanna, Tioga, Union, Wayne, Westmoreland, and Wyoming.

The most recent Drought Task Force meeting was held on May 19, 2015. Based on current hydrologic conditions and low precipitation forecasts, the Drought Task Force decided to make no changes to the Drought Watch at that time. The next Drought Task Force meeting is scheduled for June 8, 2015, at which time conditions will be assessed to determine if any action is necessary. Conditions will continue to be closely monitored.

