



NWS Wilmington, Ohio August 2016 Regional Climate Summary

Regional Climate Summary

The weather pattern that developed across the Ohio Valley during the month of August 2016 was one which was characterized by warm/humid conditions and numerous rounds of showers and heavy thunderstorms. Although there was an uneven rainfall footprint across the region, all three climate sites (Cincinnati, Dayton, and Columbus) recorded above normal rainfall for the month. Most of the heavy rainfall events occurred near/after the middle of the month.

Temperatures

Most of the month of August was characterized by a weather pattern that was seasonably warm and excessively humid across the Ohio Valley. Upper-level ridging positioned in southeastern parts of the U.S. for extended periods of time allowed for a nearly-constant supply of warm and humid air for the region. Positioned on the northwestern periphery of this ridge, the Ohio Valley experienced unusually persistent moisture funneling into the area. This not only allowed for numerous days with showers and thunderstorms, but also for dew points to be maintained near or above 70°F for long stretches of time. The moist environment inhibited temperatures from dropping very much during the nighttime. In fact, the temperature at Cincinnati (CVG) didn't fall below 65°F until the 21st of the month. This stretch began in July and was tied for the 8th longest on record (34 consecutive days at or above 65°F). Columbus (CMH) tied multiple daily record high minimums (10th, 11th, and 13th) and broke the daily record high minimum on the 12th (77°F) (old record - 76°F in 1947). Dayton (DAY) also broke the daily record on the 12th, only dropping to 76°F (old record - 74°F in 1935/1947).

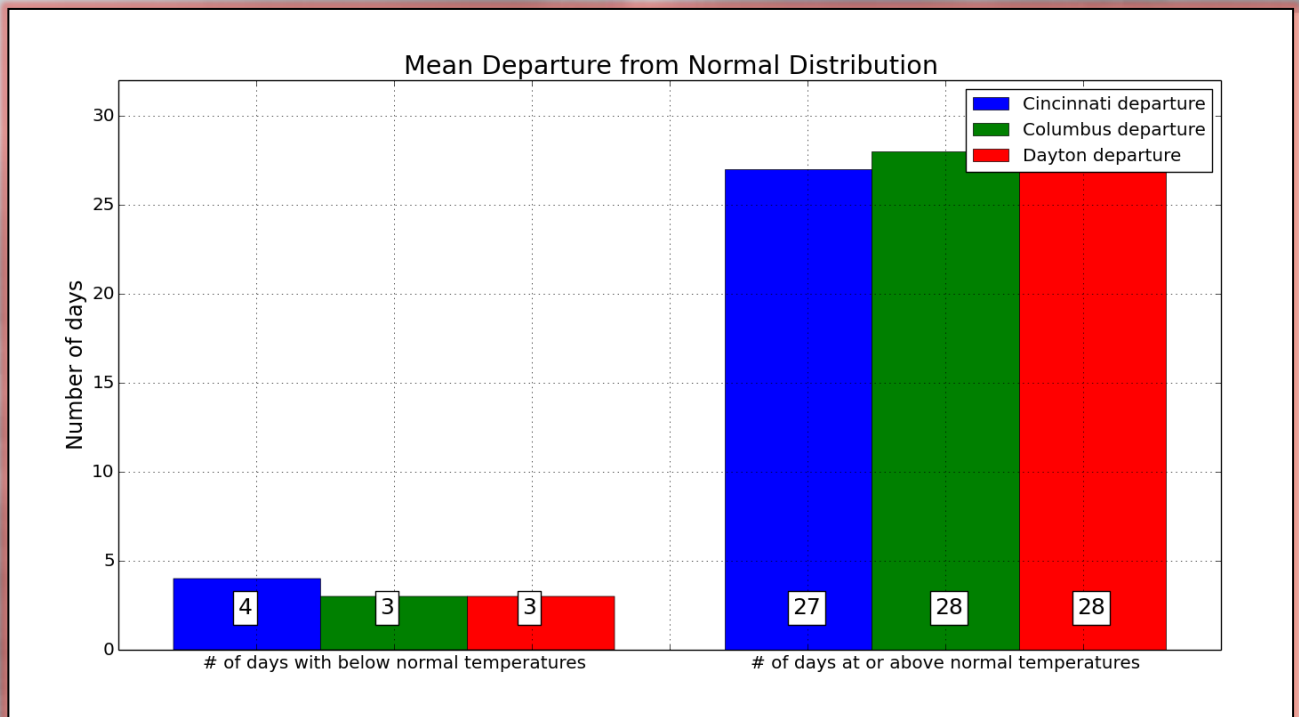
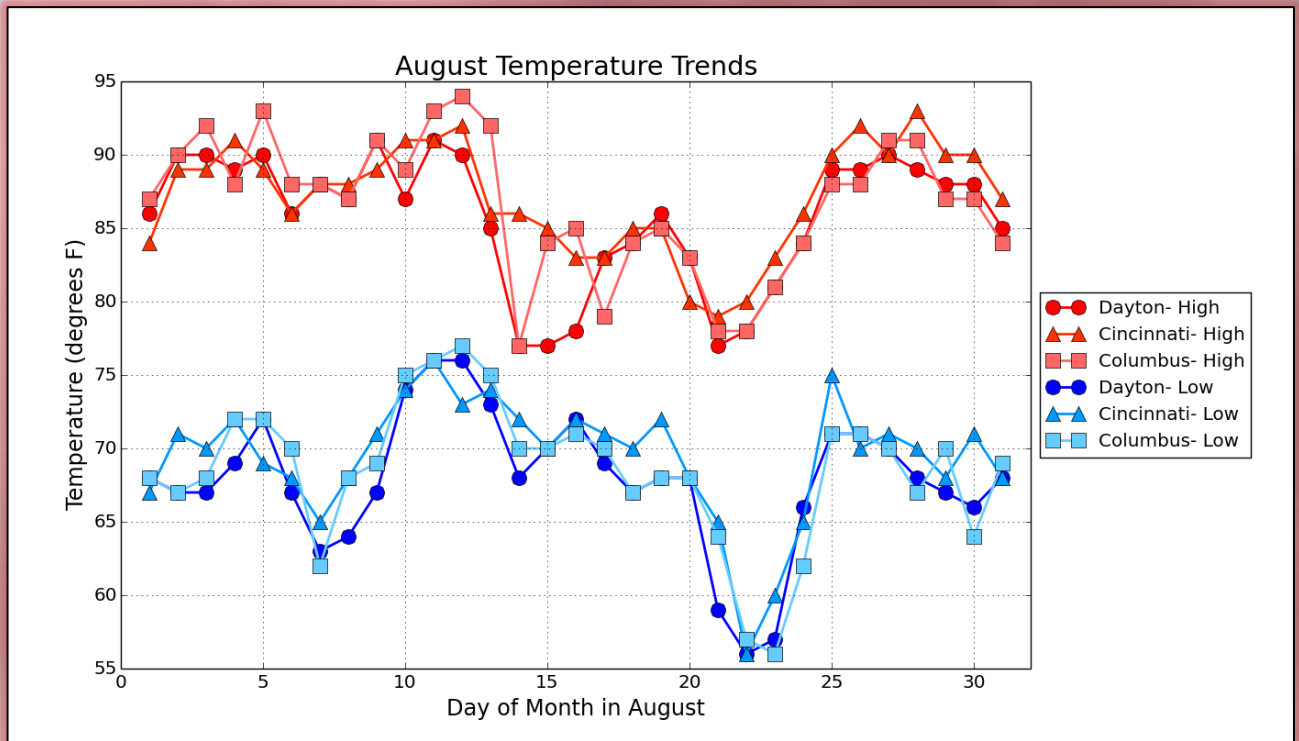
During the early morning hours on the 21st, a cold front swept through the area, allowing for cooler and much drier air to return to the area. Although this marked the end of an extended stretch with unseasonably warm low temperatures across the region, the reprieve was short-lived. Summer warmth and humidity quickly built back into the Ohio Valley for the last full week of the month. High temperatures reached into the upper 80s to lower 90s during this stretch, with lows only in the mid 60s to lower 70s.

With several extended stretches of above normal temperatures, August ended with an average temperature that was 3-4°F above normal across the area. In fact, days with above normal daily average temperatures outnumbered those with below normal daily average temperatures roughly 28 to 3 during the 31-day month.

Site	Avg Temp (°F)	Avg High Temp (°F)	Avg Low Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum Temperature (°F)
Cincinnati (CVG)	78.3°F	87.1°F	69.4°F	+3.5°F	93°F (28 th)	56°F (22 nd)
Columbus (CMH)	77.6°F	86.6°F	68.5°F	+3.7°F	94°F (12 th)	56°F (23 rd)
Dayton (DAY)	76.8°F	85.7°F	67.9°F	+4.1°F	91°F (11 th)	56°F (22 nd)



Temperatures (Continued)



Precipitation

After some scattered showers and thunderstorms on the 1st of the month, a drier pattern settled into the region through the first week of August. This being said, there were numerous days throughout August where scattered showers/thunderstorms resulted in a very uneven rainfall footprint over small areas.

Towards the middle of August, a very wet pattern developed for the Ohio Valley as midlevel ridging anchored across the mid-Atlantic region and tropical moisture streamed northward along the Mississippi River Valley into the Ohio Valley. With a moisture-rich environment in place and a stalled frontal boundary across the area, several days of showers and thunderstorms resulted in locally heavy rain from the 12th through the 17th. Thunderstorms in this tropical-like environment produced extreme rainfall rates at times, which lead to several instances of flash flooding. Cincinnati (CVG) broke their daily record rainfall on the 15th, recording 1.79" (old record – 1.37" in 1879). While this pattern led to large differences in total rainfall across the area, most of the region received at least 2-3 inches of rain during this unusually wet period.

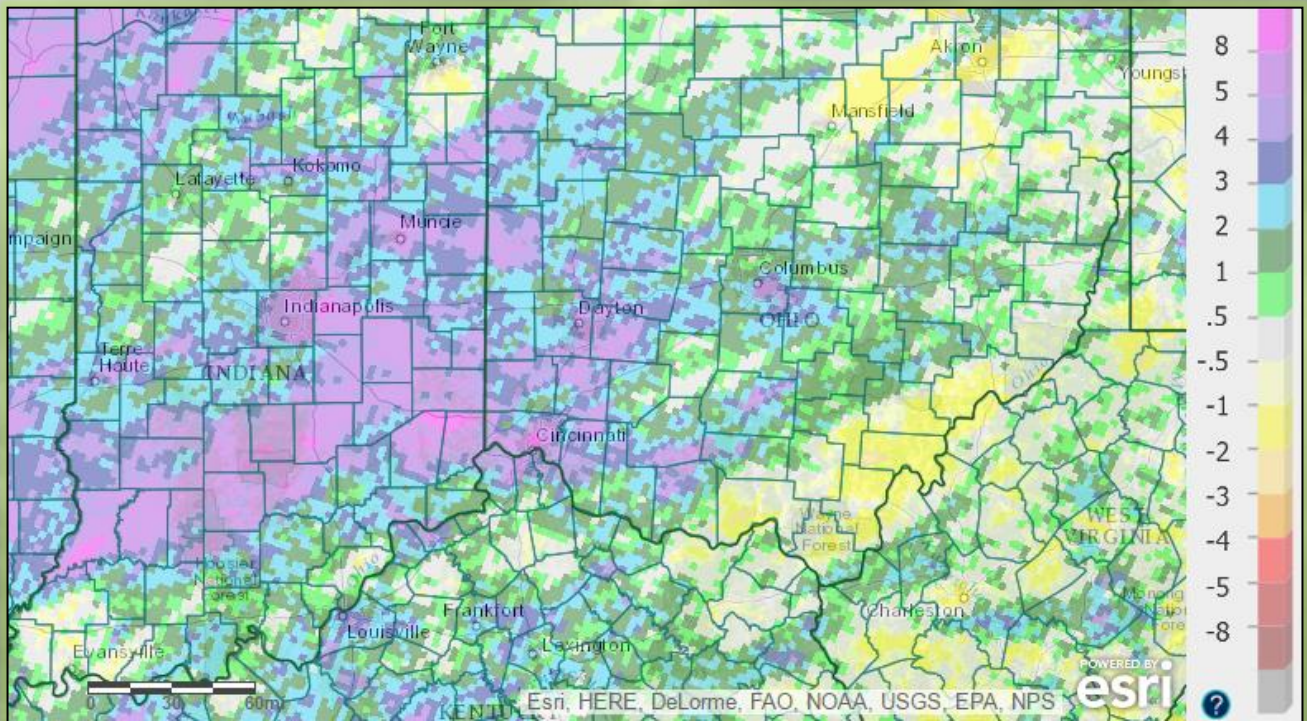
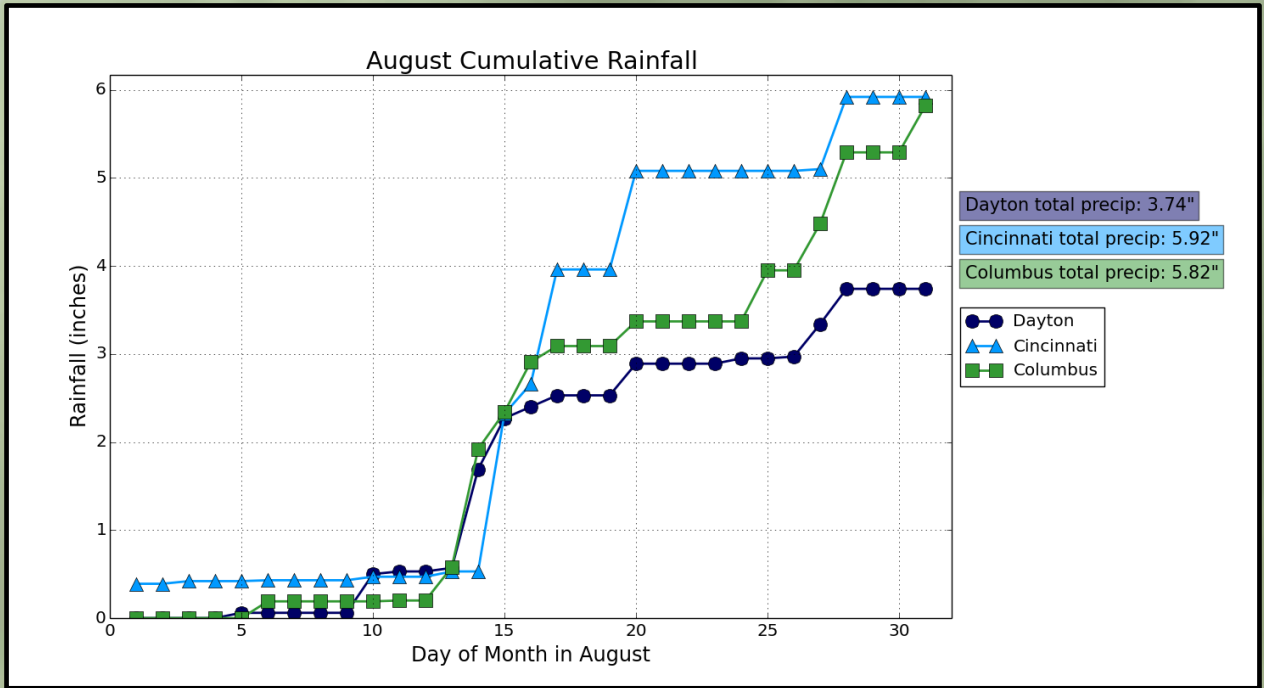
A cold front moved through on the 20th, producing another round of showers and thunderstorms in the area. Drier weather returned for several days following the frontal passage.

A summer-like pattern of afternoon shower and thunderstorm activity quickly returned to the region by the 25th. On the 27th/28th, several rounds of showers and thunderstorms with intense rainfall rates developed across the area. The nature of this activity yielded widely-varying totals over small areas. However, nearly-stationary storms resulted in numerous instances of flash flooding, some of which were extreme, especially during the evening of the 28th.

Site	Total Precipitation (in.)	Departure From Normal (in.)	Max Daily Precipitation (in./date)	
Cincinnati (CVG)	5.92"	+2.51"	1.79"	15 th
Columbus (CMH)	5.82"	+2.50"	1.34"	14 th
Dayton (DAY)	3.74"	+0.75"	1.12"	14 th



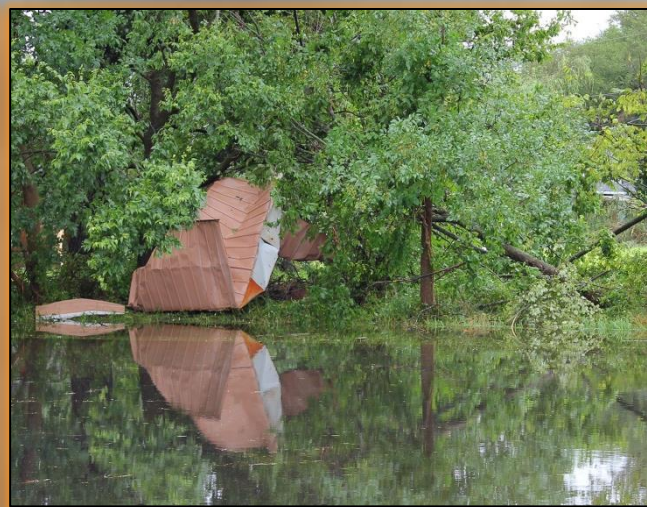
Precipitation (Continued)



Severe Weather (1)

Heavy rainfall that lead to flash flooding occurred on several days throughout the month. There were also several severe weather occurrences as well throughout August.

One of the days that severe weather occurred was on Wednesday the 17th. Flash flooding and a tornado occurred on this day. Flash flooding reports were focused primarily across southern Ohio. Many roads were inundated with the flood waters and water approached homes. In addition a road in Highland County was washed out and a culvert collapsed. An EFO tornado occurred in Sardinia in Brown County Ohio. The estimated maximum wind speed was 75 mph and the path length was a mile. Below are some images from the storm survey.



Severe Weather (2)

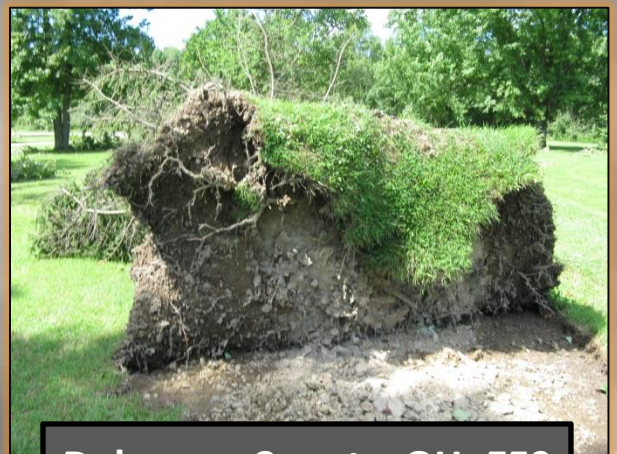
During the evening of August 20th, several supercell thunderstorms developed across northern and northwestern parts of the area. These storms maintained circulation(s) for extended periods of time and resulted in two confirmed EF0 tornadoes in the area.

A tornado occurred near Gettysburg, Ohio with estimated max winds of 76 MPH on the 20th. The tornado was confirmed to have been on the ground for almost 5 miles as it tracked to the northeast.

Another tornado occurred near Delaware State Park in Ohio with estimated max winds of 75 MPH. The tornado was on the ground for over 3 miles as it tracked to the northeast.



Darke County, OH: EF0



Delaware County, OH: EF0



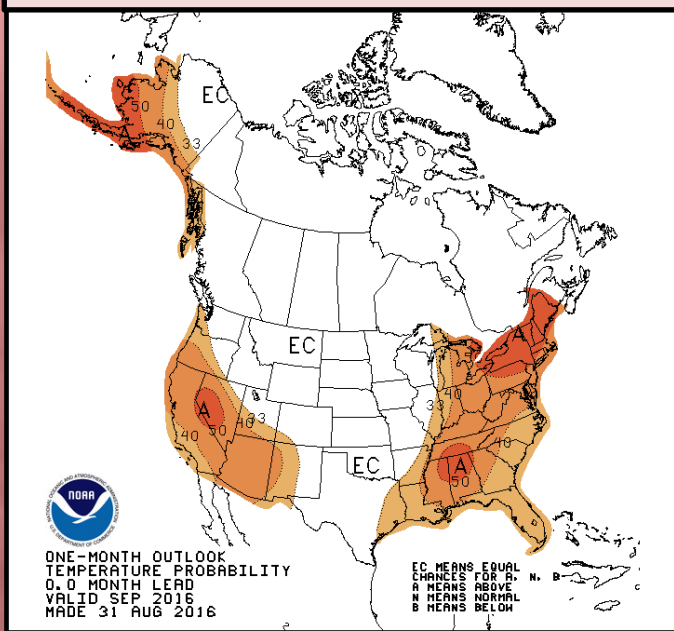
September Outlook

The latest outlook from the Climate Prediction Center (CPC) indicates higher probabilities of above normal temperatures across the region for the month of September. The outlook also shows an increased likelihood of below normal precipitation for southern parts of the region for the month.

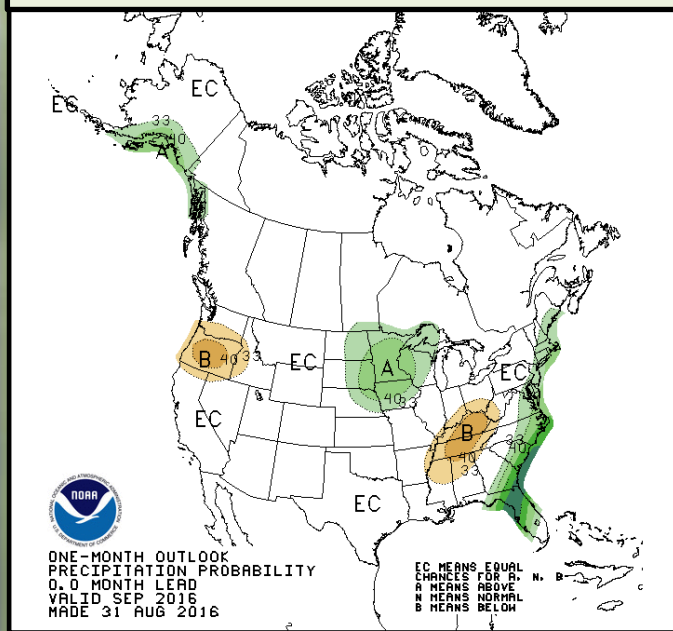
Site	Normal Avg Temp (°F)	Normal High (°F)	Normal Low (°F)
Cincinnati (CVG)	67.6°F	78.1°F	57.0°F
Columbus (CMH)	66.8°F	77.0°F	56.5°F
Dayton (DAY)	65.4°F	75.9°F	54.9°F

Site	Normal Precipitation (in.)
Cincinnati (CVG)	2.63"
Columbus (CMH)	2.84"
Dayton (DAY)	3.30"

September Temperature Outlook



September Precipitation Outlook

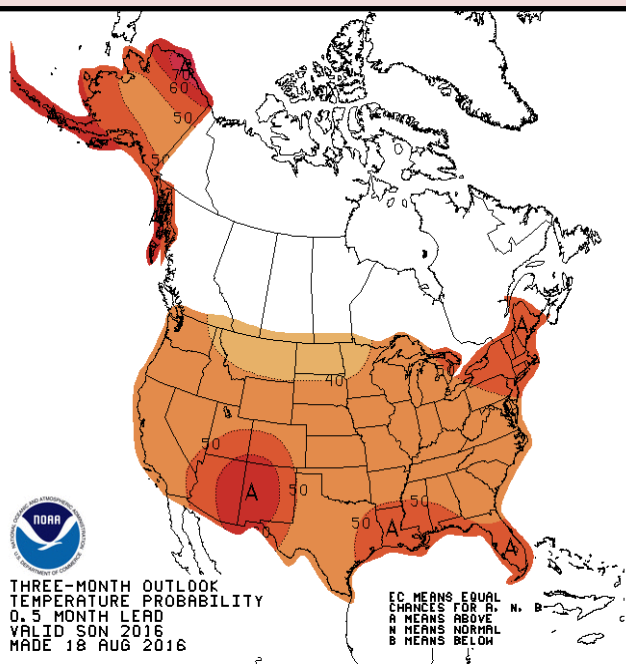


September-November Outlook

The latest outlook from the Climate Prediction Center calls for an increased likelihood of above normal temperatures not only across our area, but for the entire United States. There is not a clear signal for precipitation. There are equal chances of above, below, and normal precipitation across the region for September-November.

A La Niña watch continues. Although currently in a neutral state, La Niña is slightly favored to develop by October and a 55-60% chance of La Niña during the fall and winter 2016-2017. If La Niña develops, it is expected to be a weak event at this time.

Three-Month (SON) Temp. Outlook



Three-Month (SON) Precip. Outlook

