

NWS Wilmington, Ohio July 2017 Regional Climate Summary

Regional Climate Summary

July 2017 will largely be remembered for repeated rounds of intense storm activity that resulted in numerous instances of flooding and flash flooding in the local area. With seasonably moist low level conditions in place for most of the month, storm activity often produced heavy to extreme rainfall rates which resulted in the aforementioned flooding. With the fairly-consistent storm activity, temperatures never strayed too far from the seasonal norms.

Temperatures

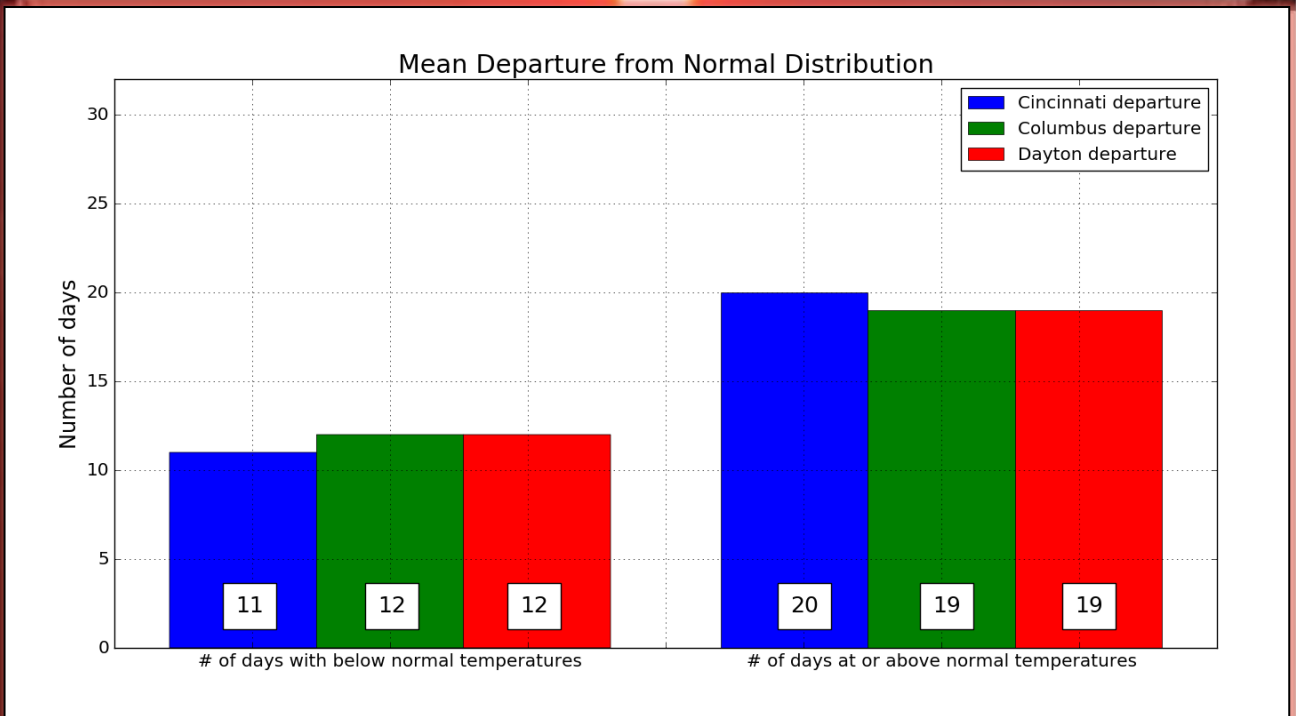
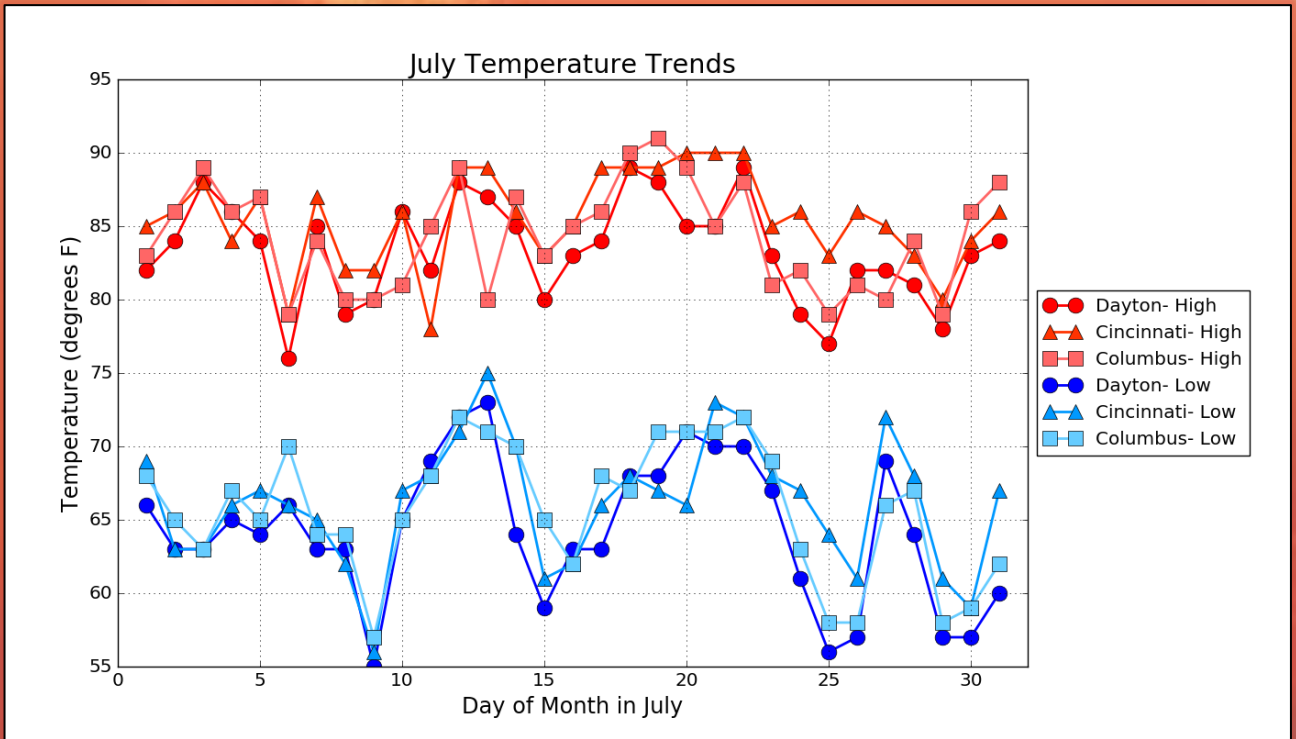
The weather pattern that evolved through much of the month of July was one that was largely characterized by seasonable warmth and humidity. There were natural fluctuations in temperatures as fronts moved through and air masses modified – but nothing unusual for July in the Ohio Valley.

Although temperatures never strayed too far from the seasonal norm, the first half of the month was a tad cooler than the second half of the month. By mid-July, seasonable heat and humidity had settled into the region, resulting in several days with temperatures around 90°F across the region. By the 20th, stifling humidity had settled into the Ohio Valley – resulting in several days with dewpoints in the 70s and even lower 80s at times. Cincinnati (CVG) recorded a dewpoint of 79°F on several instances, and both Lunken Field (KLUK) and Wilmington (KILN) recorded dewpoints above the 80°F mark at one point within the humid stretch. By the 24th, a cold front finally moved through the area, bringing slightly cooler and drier conditions back to the region. The respite was brief, however, as warmer and more humid air filtered back into the area by the 26th into the 27th. However, seasonably mild temperatures and drier air returned for the last several days of the 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)	75.8	85.5	66.1	-0.1	90 (21 st , 22 nd)	56 (9 th)
Columbus (CMH)	75.0	84.3	65.7	-0.2	91 (19 th)	57 (9 th)
Dayton (DAY)	73.8	83.4	64.2	-0.3	89 (18 th , 22 nd)	55 (9 th)



Temperatures (Continued)



Precipitation

Although sometimes the heat and humidity can be the main story in the month of July, the precipitation in the area during the month stole all the headlines.

The Ohio Valley remained on the northeastern periphery of a large and persistent mid-level ridge that was often centered across the south-central Plains. With this setup in place, numerous disturbances embedded within the larger-scale flow moved through the local area, resulting in numerous days with showers and thunderstorms. With the very moist conditions in place (referenced in the temperature summary), there were numerous instances of heavy to even extreme rainfall during the month. For example, Dayton (DAY) recorded 3.27" on the 6th and 7th combined. Columbus, meanwhile, on the 13th, recorded 3.11" on a single day. This was the 10th wettest single day on record at Columbus. Significant flooding resulted from the persistent heavy rain on the 13th, and a more detailed summary of that event is on page 11.

There were several other days where heavy rain occurred at Columbus, resulting in a very wet month as a whole. In fact, July 2017 was the 4th wettest July on record for the site.

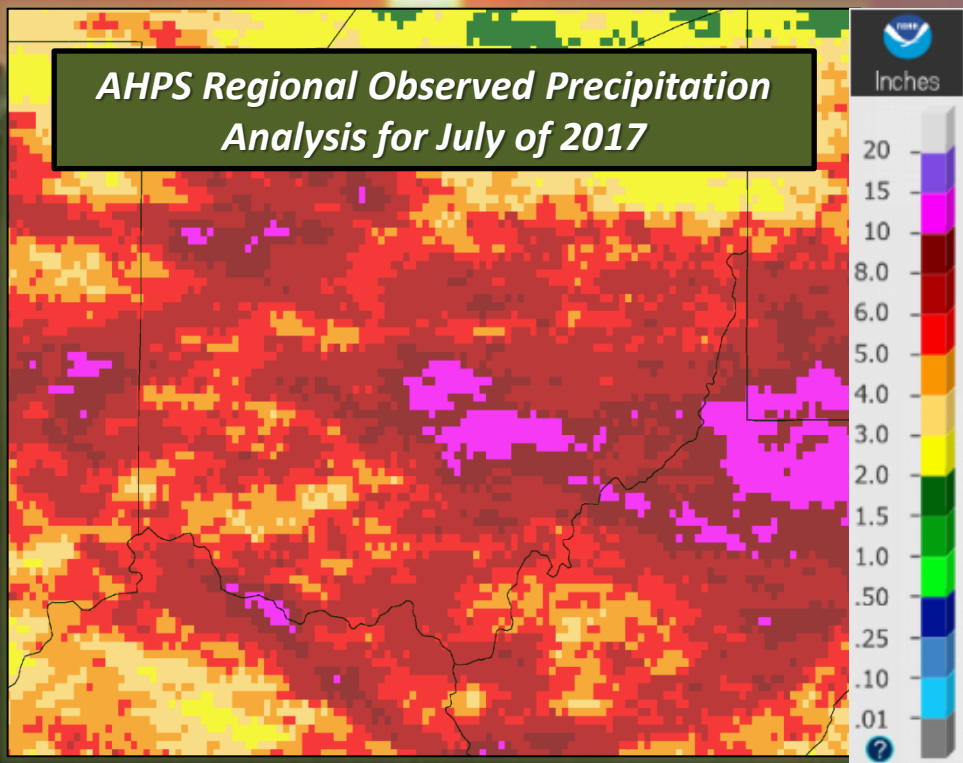
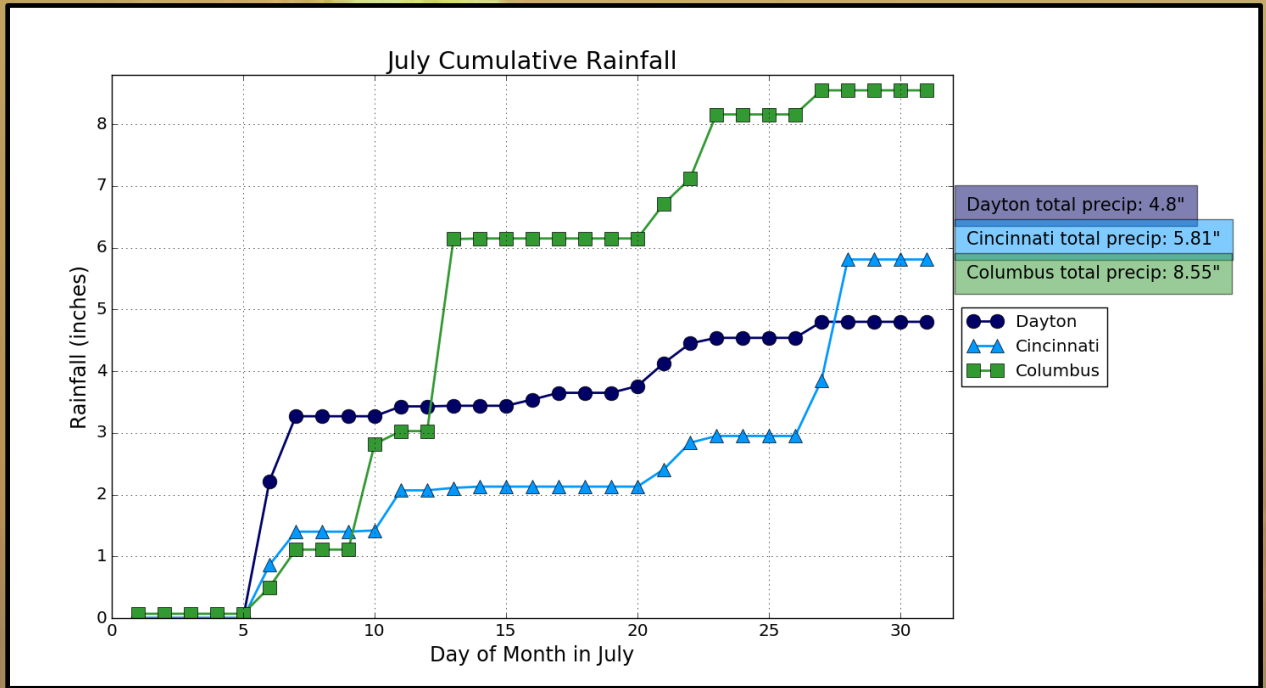
Despite repeated rounds of storms, only 1 daily precipitation record was set during the month. Dayton recorded a daily maximum precipitation of 2.22" on the 6th, breaking the old record for the date on 1.91" (1926).

The final heavy rain event for the month arrived on the 27th, when a low pressure system tracked through the Ohio Valley.

Site	Total Precipitation (in.)	Departure From Normal (in.)	Max Daily Precipitation (in./date)		Total Snowfall (in.)	Max Daily Snowfall (in./date)	
Cincinnati (CVG)	5.81	+2.05	1.96	28 th	--	--	--
Columbus (CMH)	8.55	+3.76	3.11	13 th	--	--	--
Dayton (DAY)	4.80	+0.69	2.22	6th	--	--	--



Precipitation (Continued)



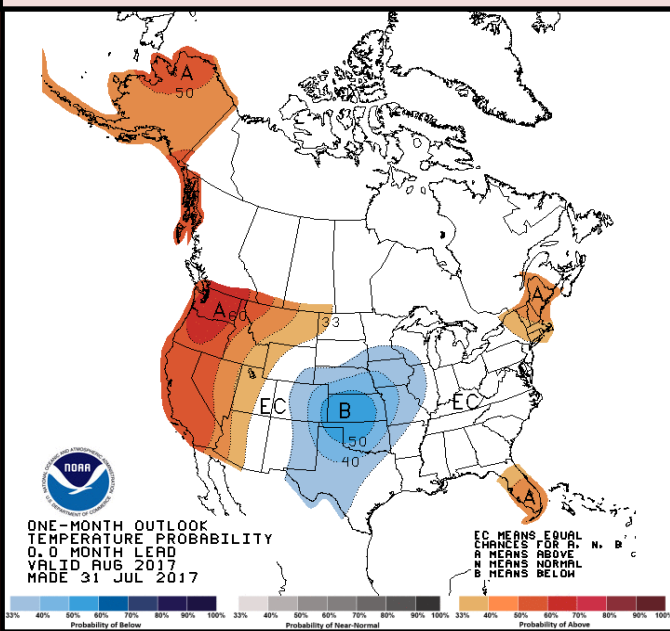
August Outlook

The latest outlook from the Climate Prediction Center calls for an equal chance of near, above and below normal temperatures along with precipitation.

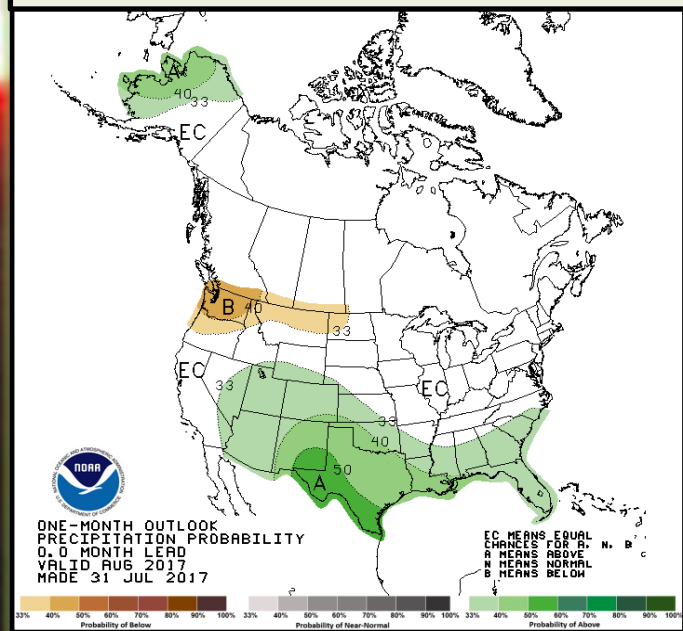
Site	Normal Avg Temp (°F)	Normal High (°F)	Normal Low (°F)
Cincinnati (CVG)	74.8	84.9	64.8
Columbus (CMH)	73.9	83.7	64.1
Dayton (DAY)	72.7	82.6	62.7

Site	Normal Precipitation (in.)
Cincinnati (CVG)	3.41
Columbus (CMH)	3.32
Dayton (DAY)	2.99

Upcoming Temperature Outlook



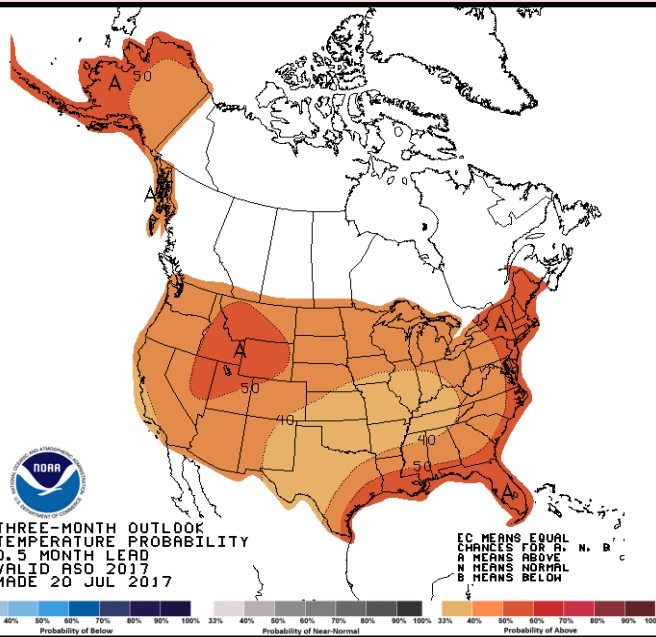
Upcoming Precipitation Outlook



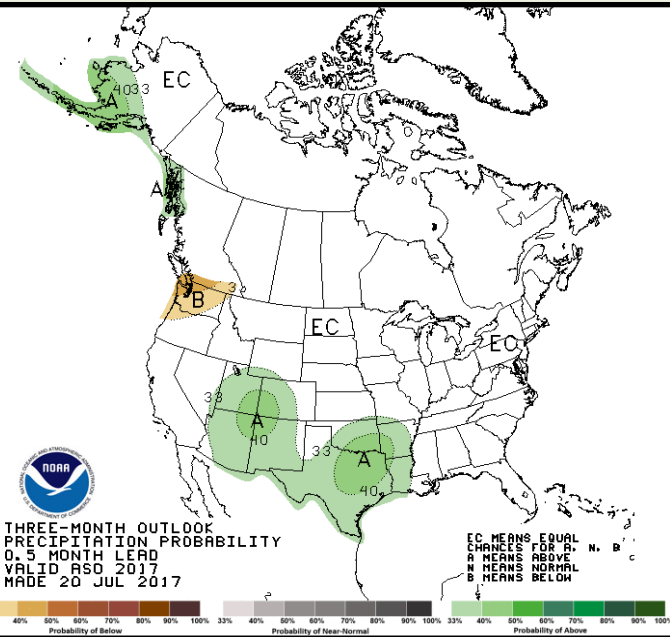
August-October Outlook

The latest outlook for the late summer and early fall time period from the Climate Prediction Center (CPC) indicates increased probabilities for above normal temperatures across much of the eastern United States, including the Ohio Valley region. Currently, there is not a clear signal for either above normal or below normal precipitation during this time period anywhere across the eastern third of the country.

Three-Month (ASO) Temp. Outlook



Three-Month (ASO) Precip. Outlook



Severe Weather

Severe weather occurred on July 7th, 2017 with mostly wind reports. The first round of storms occurred in the late morning of the 7th into the early afternoon. A second round of storms then developed late afternoon into evening and pushed across the central zones. A survey concluded that a microburst was responsible for damage observed in the Fayetteville, Ohio area.



Severe Weather

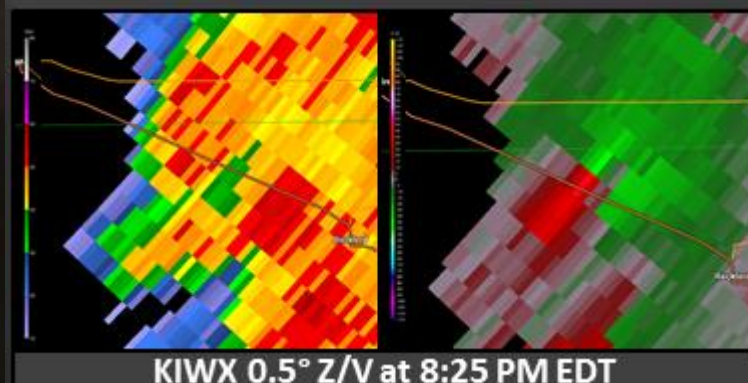
Severe weather initially moved across the Columbus area during the daytime hours on July 10th. Another round of severe weather moved into Mercer County during the evening hours. An EFO Tornado touched down near Rockford, Ohio. The tornado was on the ground from about 8:14pm to 8:31pm and had estimated maximum wind speeds of 70 mph. Although this tornado was quite a distance away from any of the local servicing radars, its rotational signature appeared well on the NWS North Webster, IN (KIWX) 0.5° scan, even several thousand feet above ground level.



Drone Photo Of Tornado Path



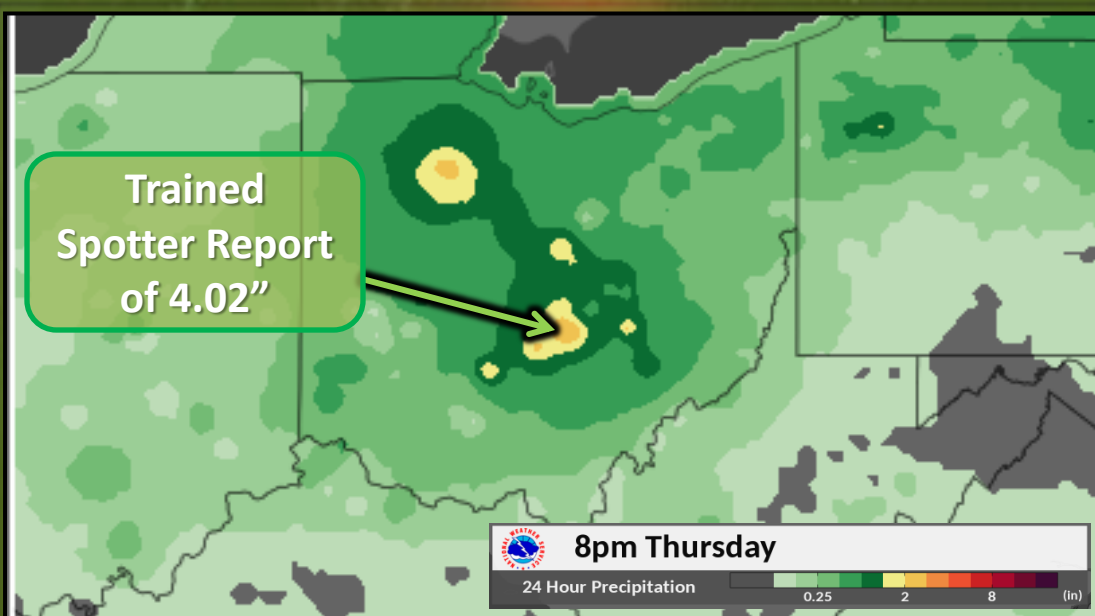
Tornado Damage



KIWX 0.5° Z/V at 8:25 PM EDT

Flooding

During the late morning and early afternoon hours on July 13th, slowly-moving thunderstorms developed in central Ohio. These thunderstorms formed in an environment that was very conducive to heavy rainfall rates – which materialized into extensive flooding and flash flooding in parts of Franklin, Licking, Pickaway and Fairfield Counties in Ohio. Some of these storms trained, or travelled, over the same areas, resulting in repeated heavy rainfall. John Glenn International Airport (KCMH) measured 3.11 inches for the day, with many other reports of 3-5 inches in the area. Parts of southwestern Ohio were also impacted by heavy rain and subsequent flash flooding. So much rain fell in such a short period of time that flooding resulted in the closure of Interstate I-70 near Buckeye Lake for an extended period of time. At one point, both the eastbound and westbound lanes were closed, but the eastbound lane remained closed longer than the westbound.



Flooding

During the late evening hours of the 22nd and the early morning hours of the 23rd, several clusters of very-heavy-rain-producing storms moved through southwestern portions of the area. These storms underwent multiple instances of back-building (developing further upstream) and training, which resulted in numerous reports of 4-7+” of rain, most of which fell in a 2- or 3-hour span. There was even a report from southeastern Mason County, KY of 7.42” in a 7.5 hour span. This repeated intense rainfall lead to several instances of extreme flash flooding. There were several homes swept off foundations and vehicles carried away by the high rushing water. Most of the extensive damage occurred in Bracken and Mason Counties in KY and southern Brown in OH.

