

Central Indiana Fall 2017 Summary

As we begin the month of December, we mark the conclusion of meteorological fall and welcome meteorological winter. Temperatures remained above average throughout much of the first half of the fall, before cooling to below normal levels through much of November. Overall, the fall of 2017 saw average temperatures above normal by 1 to 3 degrees. The dry conditions that developed in August after the exceptionally wet first half of summer continued through September and October, with many parts, but not all, of central Indiana running up to 2 inches below normal on precipitation. Most of central Indiana saw the first snowflakes of the season in late October, the first time that had happened since 2014. Additional minimal snowfall amounts from a Trace up to near an inch occurred in November across northern portions of central Indiana.

The following is a summary of weather conditions experienced in Central Indiana during the months of September, October, and November 2017.

Temperatures

The fall of 2017 was tied for the **22nd warmest fall ever at Indianapolis** with an average temperature of **57.3°**. This is 2.1° above the normal fall average temperature of 55.2°.

September

September 2017 will be remembered for its extremes, as the first half of the month was largely much cooler than normal followed by a flip to much warmer conditions for the second half of the month. Temperatures averaged 1 to 3° above normal for the month.

The remnants of Hurricanes Harvey and Irma contributed to the cooler weather over the Ohio Valley. Harvey's remnants passed through the region on the 1st, bringing a much cooler easterly flow into central Indiana. Temperatures generally remained no warmer than the mid 60s throughout the day. After a brief recovery to above normal temperatures over the second half of the Labor Day weekend, the passage of a cold front late on the 4th ushered in an extended stretch of cooler than normal weather that lasted well into the second week of the month. Highs generally were no warmer than the upper 70s with lows in the 50s and occasionally dipping into the 40s. The arrival of the remnants of Hurricane Irma brought cloudy, wet and cooler temperatures on the 12th and 13th, highlighted by highs only in the 60s on the 13th.

Once the remnants of Irma departed off to the northeast on the 14th, a transition commenced to a much warmer conditions as strong upper level ridging and high pressure largely influenced the weather across central Indiana and the Ohio Valley for the second half of the month. Highs recovered into the 80s beginning on the 15th and would stay at or above 80° through the 27th. Much of central Indiana would experience their hottest temperatures of 2017 during a stretch from the 20th through the 26th where highs were routinely at or above 90°. Indianapolis warmed into the 90s for 6 consecutive days from the 21st to the 26th, including tying record highs on the 22nd, 24th and 26th. The high of 93° on the 22nd was not only the warmest temperature officially recorded in Indianapolis for the year, it also became the warmest temperature on a Fall Equinox in recorded history. Lows were well above normal through this period as well, holding in the 60s and even remaining as high as the lower 70s on a couple nights. The passage of a cold front late in the day on the 27th finally brought an end to the late season heat wave with temperatures returning to more seasonable levels for the last few days of the month.

October

Warmth dominated the first half of October, with some days even having a summer-like feel to them. High pressure across the southeastern part of the country kept a flow of warm air from the south into central Indiana. High temperatures reached the middle 80s a couple of times during the first week of the month at many locations.

A cold front, and the remnants of Hurricane Nate, brought cooler temperatures for part of the second week of the month. However, warmer air refused to stay away. By the 14th, temperatures had returned to the 80s.

Another cold front brought cooler, but still above average, temperatures to the area for much of the third week of the month. For the Indianapolis area, the first 23 days of October averaged the 5th warmest of record and the warmest since 2007. Big changes were on the way though.

A shift in the jet stream allowed a potent cold front to bring much colder air to central Indiana to close out the month. Temperatures reached their coldest levels since Spring, with many areas falling to below freezing by the morning of the 26th. High temperatures struggled to reach the lower 40s on the 28th. Those highs are closer to normal highs in early December. These temperatures allowed some areas to see their first snowflakes on the 27th and 28th. The last 8 days of October averaged the eighth coldest of record for the Indianapolis area and was the coldest since 1988.

November

November started out warm as southerly flow enabled highs into the 60s across much of the area. Temperatures peaked on the 5th ahead of a strong cold front that moved across central Indiana late in the day. Highs rose into the 70s over much of the Ohio

Valley ahead of thunderstorms, marking the high point for temperatures for the entire month.

Temperatures became much more seasonable behind the front, with highs mainly in the 50s from the 6th through the 9th. Another frontal passage brought the first significant incursion of colder air into the region beginning on the 10th as highs only held in the low to mid 30s with lows falling well into the 20s. Highs slowly recovered into the 40s over the next week before peaking in the 60s once again on the morning of the 18th ahead of strong low pressure and a cold front. Temperatures were cooler behind the front but remained generally near normal into Thanksgiving week with highs in the 40s and 50s.

Warmer air returned on the 24th and remained through the end of the month as high pressure dominated the weather across the Ohio Valley. High temperatures surged to nearly 20 degrees above normal in the 60s on multiple days at the end of November. After a few chilly mornings in the lower and middle 20s on Thanksgiving week, lows warmed into the 30s and even lower 40s for the last few days of the month.

Temperature Data for Other Sites in Central Indiana

Site	Fall 2017 Temperature	Normal Temperature	Diff. From Normal
Indianapolis Int'l Arpt	57.3°	55.2°	+2.1°
Lafayette	55.4°	54.4°	+1.0°
Muncie	57.1°	54.4°	+2.7°
Terre Haute	56.8°	53.9°	+2.9°
Bloomington	56.9°	54.7°	+2.2°
Shelbyville (*)	56.9°	54.5°	+2.4°
Indianapolis – Eagle Creek	57.3°	55.3°	+2.0°

(*) - Shelbyville temperature data missing for November 16.

Fall Extremes Across Central Indiana

Site	Warmest Temperature	Coldest Temperature
Indianapolis Int'l Airport	93° on 9/22	23° on 11/22
Lafayette	92° on 9/22	19° on 11/10
Muncie	93° on 9/21, 9/22 and 9/23	22° on 11/11

Terre Haute	94° on 9/21 and 9/22	24° on 11/22 and 11/23
Bloomington	93° on 9/22	23° on 11/26
Shelbyville	93° on 9/22, 9/23 and 9/24	23° on 11/23 and 11/26
Indianapolis-Eagle Creek	94° on 9/22	24° on 11/11

Precipitation

Overall this was the **56th driest fall on record at Indianapolis**. The total rainfall for Indianapolis this fall was 7.57 inches. This was 2.37 inches below the normal fall rainfall total of 9.94 inches.

September

Monthly precipitation for September was below normal for much of Indiana, marking the second consecutive dry month for much of the region. Monthly totals ranged from less than a quarter of an inch in portions of west central Indiana to over 6 inches in southeast Indiana. Most areas received between 0.50 to 3.50 inches of rainfall during the month. For the Indianapolis airport area, September 2017 tied for the 5th driest September of record and was the driest September since 2010.

There were no widespread heavy rain events during September. Rains from the remnants of Hurricanes Harvey and Irma favored portions of southern and east central Indiana. Harvey brought one-half to over 4 inches of rain on the 1st and 2nd while Irma's one-half to slightly more than an inch of rain fell from the 12th through the 14th. Rains of one-half to over 3 inches fell in much of western and northern Indiana on the 18th and 19th. This was the first significant rains in parts of western Indiana since July 23rd.

Very brief high water occurred along Lick Creek in the Beech Grove area in Marion County during the early evening of the 18th. More than 3 inches of rain fell in less than 4 hours in the local area.

The dry spell that began in late July in southwest and west central Indiana continued into September. Much of this area received less than an inch of rain during September. Moderate drought conditions developed in much of west central Indiana by the 19th. Abnormally dry to moderate drought conditions prevailed in nearly 40% of the state at the end of the month according to the U.S. Drought Monitor. Highlighting just how dry conditions have gotten in the area, Indianapolis experienced the wettest day of 2017 on July 11th, when 3.78" of rain fell. From July 12th through the end of September, Indianapolis officially recorded 3.80" of rain.

October

Monthly precipitation for October ranged from near normal to much above normal for Indiana. Monthly totals ranged from slightly over two inches in north central Indiana to more than 11 inches in northwest Indiana. Most areas received between 2½ and 5½ inches of rainfall during the month.

The first rains since September 19th for much of the state began to fall on October 4th. In the 12-day period from the 4th through the 15th, Indiana received from an inch of rain in southwest Indiana to nearly 8 inches in northwest Indiana. The largest rain events during this period occurred on the 7th and 8th when 2 to 4 inches fell in southeast Indiana from the remains of Hurricane Nate and on the 14th when storms dumped 2 to 6 inches of rain in northwest Indiana. This precipitation greatly improved the ongoing drought conditions.

Dry weather returned again to Indiana on the 16th and continued through most of the 22nd. Widespread rains of one-half of an inch to nearly 4 inches fell on the 23rd and 24th. The heaviest rains fell in northwest and southwest Indiana. Nearly 3 days later, melted precipitation of a quarter of an inch to nearly 1½ inches fell in central and southern Indiana on the 27th. The highest amounts occurred in south central and southeast Indiana. This precipitation virtually ended all drought conditions in the state. The dry spell that began in the state during late July ended by October 28th.

The season's first frozen precipitation fell in central Indiana during the afternoon of the 27th. Ice pellets and snowflakes were reported in much of the area. The last time winter precipitation fell in the Indianapolis area during October was on October 31, 2014.

November

Monthly precipitation for November was near normal to above normal for much of Indiana. Monthly totals ranged from slightly over 1.5 inches in southwest Indiana to just over 8 inches in portions of north central and east central Indiana. Most areas received between 3 and 6 inches of rainfall during the month.

Most of the precipitation during November was concentrated in the first 18 days of the month. Locally heavy rains of 1 to nearly 3 inches fell in portions of Indiana from the 1st through the 3rd. Storms on the 5th dumped from 1 to nearly 5 inches of rain in much of the eastern half of Indiana. Severe weather returned on the 18th and dropped an additional 1 to 4 inches of rainfall in central and northern Indiana. A dry spell began on the 19th and continued through the 29th. Light rainfall of 0.01 to 0.30 inches fell state-wide during the morning of the 30th.

Monthly snowfall for November ranged from a trace to an inch in central and northern Indiana. Portions of central and northern Indiana received from a trace to one-half of an inch early on the 1st. Frozen precipitation fell again in northern Indiana on the 9th, 10th, 12th, 18th, 19th, and 23rd in the form of light snow and in central Indiana on the evening of the 21st in the form of ice pellets.

Lowland river flooding returned to the area for the first time since July. Lowland flooding from the storms of the 5th was in portions of eastern and southern Indiana and lasted from a day to nearly 3 days. More extensive lowland flooding developed in central and western Indiana following the storms of the 18th. High water persisted from about 2 days to a week along the Wabash River.

Rainfall Data for Other Sites in Central Indiana

Site	Fall 2017 Rainfall	Normal Rainfall	Diff. From Normal
Indianapolis Int'l Arpt.	7.57"	9.94"	-2.37"
Lafayette (*)	6.32"	8.52"	-2.20"
Muncie	11.75"	10.83"	+0.92"
Terre Haute	9.19"	9.33"	-0.14"
Bloomington	9.40"	10.82"	-1.42"
Shelbyville	13.15"	10.01"	+3.14"
Indianapolis – Eagle Creek (**)	7.17"	9.06"	-1.89"

(*) - Lafayette precipitation data missing on October 7, October 10 and November 5.

(**) – Indianapolis Eagle Creek Airpark precipitation data missing on October 28.

Major Weather Events

September was a dry month that saw very little in the way of rain and thunderstorms across central Indiana. The only severe weather occurred on the evening of September 4th as a line of storms tracked into northern portions of central Indiana. The storms produced pockets of wind damage and small hail before weakening. October was a quiet month for severe weather as well. Thunderstorms damaged a church and some homes on the south side of Indianapolis on October 7th.

Two late season severe weather events impacted central Indiana in November. The first and more extensive severe weather occurred on the afternoon of November 5th ahead of a strong cold front. Severe thunderstorms developed near midday over northern portions of central Indiana and raced east into the afternoon. Three tornadoes occurred over central Indiana. The first two impacted the northeast portions of central Indiana, including the longest track tornado of the entire event which began over northeast Delaware County just northeast of Eaton. This EF2 tornado would eventually track 39 miles into Blackford and Jay Counties before crossing into Mercer County in Ohio. A second tornado briefly touched down in Muncie near the Muncie Fieldhouse, embedded within an area of strong straight line winds. This tornado was rated EF1 with maximum winds to 95 mph. The third tornado of the day developed from an intense supercell thunderstorm that tracked across southern portions of central Indiana. The EF1 tornado

tracked for 3 miles near Springville in Lawrence County, damaging multiple structures. Storms also produced wind damage and large hail throughout central Indiana. For more information on this event, click on <http://www.weather.gov/ind/nov52017severe>.

The other severe weather event of the month occurred during the late morning and afternoon of November 18th ahead of strong low pressure and a cold front. Thunderstorms produced wind damage primarily focused northwest of the Indianapolis metro area. A brief EF0 tornado tracked for less than a mile just to the northeast of Dayton in Tippecanoe County, damaging a house and knocking down several trees. A microburst with maximum winds to 85 mph produced extensive damage on the east side of Frankfort. For more information on this event, click on <http://www.weather.gov/ind/nov182017severe>.

For information on severe weather in other areas throughout the fall, visit the Storm Prediction Center "Severe Weather Event Summaries" website at <http://www.spc.noaa.gov/climo/online/>.

Winter 2017-2018 Outlook for Central Indiana

The official outlook for the 2017-18 winter season (December-February) from the Climate Prediction Center, indicates equal chances for near, above or below normal temperatures across central Indiana. At Indianapolis, the average temperature for the winter season is 30.5°. The outlook also calls for a greater chance of above normal precipitation. The average precipitation is 8.15" with 22.0" of snowfall.

Data prepared by the NWS Indianapolis Climate Team
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