

# Central Indiana Fall 2019 Summary

The following is a summary of weather conditions experienced in Central Indiana during the months of September, October, and November 2019.

## Temperatures

The fall of 2019 was tied for the **49<sup>th</sup> warmest fall ever at Indianapolis** with an average temperature of **55.9°**. This is 0.7° above the normal fall average temperature of 55.2°.

### September

Cooler than normal temperatures were hard to find throughout the month of September that goes down as the warmest September in recorded history at Indianapolis. This was largely due to a persistent upper level ridge over the Ohio Valley for much of the month and progressively drier ground conditions with many areas receiving less than 2" of rain through September. The bulk of the coolest temperatures coming through the first week of the month with multiple days enjoying highs in the mid and upper 70s and overnight lows in the upper 50s and lower 60s.

Beginning on the 9<sup>th</sup> a broad upper level ridge expanded across the eastern part of the country and for the most part, would remain over the area through the end of the month. Highs in the lower 90s returned for several consecutive days from the 10<sup>th</sup> through the 13<sup>th</sup> with lows in the upper 60s and lower 70s. Temperatures would cool down slightly over the following week but still remained well above normal in the 80s. A frontal passage early on the 23<sup>rd</sup> knocked temperatures back closer to late September normals with highs primarily in the 70s through the 26<sup>th</sup>. The coolest morning lows of the entire month in the upper 40s and lower 50s occurred during this period. The return of the upper ridge for the last few days of the month brought well above normal temperatures back to central Indiana including highs into the lower 90s on the 27<sup>th</sup> and again on the 30<sup>th</sup>.

Average temperatures ended up running 5-7° above normal across central Indiana for September with Indianapolis experiencing their warmest September on record with an average temperature of 73.7° which was a full half degree warmer than the previous warmest September in 1925. The addition of 6 more 90°+ days during the month brought the 2019 total to 24 days with highs of 90° or warmer in Indianapolis.

## **October**

The hot weather experienced throughout the second half of September continued as the calendar turned to October, ushering in the hottest start to the year's tenth month in recorded history. High temperatures on the 1<sup>st</sup> and 2<sup>nd</sup> made it into the low 90s across central Indiana and in Indianapolis, both days reached 92° which established a new all-time record high for the month. October 1<sup>st</sup> and 2<sup>nd</sup> also marked just the 5<sup>th</sup> and 6<sup>th</sup> October days in recorded history where the temperature made it into the 90s in Indianapolis. In addition, the 70° low temperature on the morning of the 2<sup>nd</sup> was only the tenth low temperature in the 70s in October in Indianapolis on record.

A much welcomed cold front swept the heat away from the region on the 3<sup>rd</sup> with progressively cooler and more seasonable temperatures with daytime highs largely in the 70s most days through the 11<sup>th</sup>. Morning lows fell back into the 50s then the 40s. The 12<sup>th</sup> brought the first taste of fall in the wake of a cold front as highs remained mainly in the 50s after the first frosty morning of the season for many locations. Temperatures shifted to cooler than normal for the most part for the rest of October as just a few days experienced highs above 70° from the 13<sup>th</sup> through the end of the month. For the most part, highs were in the 50s and 60s with lows ranging from the upper 30s to around 50° throughout the second half of the month.

The coldest weather of the month and the season to date arrived on the 30<sup>th</sup> and 31<sup>st</sup> as a rainy, unsettled pattern ahead of a cold front held highs in the 40s. On Halloween, the front passed through central Indiana late morning with temperatures falling into the 30s through the afternoon and evening, providing the first hints that winter is not far away and making for miserable Trick or Treat conditions for the area. The first widespread hard freeze for the entire area came Halloween evening into the morning of November 1<sup>st</sup> as temperatures tumbled into the 20s. Many locations fell below freezing prior to midnight on Halloween.

The October high temperature of 92° and low temperature of 29° at Indianapolis produced a 63° spread for the month, which is the fourth largest temperature spread for the month of October on record, behind 1952, 1954 and 1965.

## **November**

A cold and unsettled Halloween ensured a chilly start to November and in many ways, set the tone for what would be a cold month for central Indiana. Temperatures recovered from the cold finish to October during the first week of November but remained cool, with highs in the 50s and lows generally in the 30s. In the wake of a frontal passage on the 7<sup>th</sup>, temperatures tumbled to their coldest levels of the Fall so far, with many locations remaining in the 30s on the 8<sup>th</sup> with lows into the teens. After a one day warmup on the 10<sup>th</sup> that saw temperatures reach the low 60s and end up being the warmest day of the month in many locations, the bottom would drop out with the coldest

airmass of the season settling over the Ohio Valley as a strong cold front passed through.

The unusually early shot of bitterly cold air would set multiple records on the 12<sup>th</sup> and 13<sup>th</sup>. Highs both days remained in the 20s across the region and on the 12<sup>th</sup>, a few spots had trouble getting out of the teens during the day. Lows fell into the single digits both days with snow on the ground and for Indianapolis, it was the earliest single digit low for the Fall on record, besting 1959 when the first single digit temperature occurred on November 17. The record low for the 12<sup>th</sup> at Indianapolis was established at 8°, obliterating the previous record low for the date of 14° in 1911. That was followed by the coldest daytime high on record for the 12<sup>th</sup> at 22°, which topped the previous record from 1920 by 4°. Indianapolis set another record low at 9° on the 13<sup>th</sup>, topping the previous record low of 10° from 1986.

Temperatures warmed through the middle of the month from the recold cold but remained below normal with highs primarily in the 40s and lows in the 20s and lower 30s. Even warmer temperatures arrived the last week of the month with a few days just prior to Thanksgiving where highs rose to above normal levels in the mid and upper 50s. Otherwise, seasonable conditions persisted through the end of the month. Temperatures averaged roughly 4 to 6 degrees below normal for November across central Indiana.

## ***Temperature Data for Other Sites in Central Indiana***

Site	Fall 2019 Temperature	Normal Temperature	Diff. From Normal
Indianapolis Int'l Arpt	55.9°	55.2°	+0.7°
Lafayette	53.7°	54.4°	-0.7°
Muncie	56.4°	54.4°	+2.0°
Terre Haute	55.2°	53.9°	+1.3°
Bloomington	55.6°	54.7°	+0.9°
Shelbyville	55.9°	54.5°	+1.4°
Indianapolis – Eagle Creek	55.5°	55.3°	+0.2°

## ***Fall Extremes Across Central Indiana***

Site	Warmest Temperature	Coldest Temperature
------	---------------------	---------------------

Indianapolis Int'l Airport	92° on 9/10, 9/30, 10/1 and 10/2	8° on 11/12
Lafayette	92° on 9/12	5° on 11/12 and 11/13
Muncie	93° on 9/12, 10/1 and 10/2	7° on 11/13
Terre Haute	93° on 10/1	4° on 11/12 and 11/13
Bloomington	93° on 9/30 and 10/1	5° on 11/13
Shelbyville	93° on 9/30	4° on 11/13
Indianapolis-Eagle Creek	91° on 9/10, 9/12 and 10/1	6° on 11/13

## Precipitation

Overall this was the **56<sup>th</sup> driest fall on record at Indianapolis**. The total rainfall for Indianapolis this fall was **7.56"**. This was 2.38 inches below the normal fall rainfall total of 9.94 inches.

### September

September began with a brief wet note for much of central Indiana as a round of thunderstorms brought between a quarter of an inch to as much as an inch to the area. Most of the state remained fairly dry for the following two weeks with isolated showers occasionally bringing localized relief to the very dry conditions.

A large heavy rainfall event on the evening of Friday the 27th and early morning of the 28th brought significant rainfall amounts to parts of northwest and northern Indiana. These rainfall amounts of two to almost five inches, generally over six hours or less, produced some flash flooding over northern Indiana, but also provided some relief to the drought in that area..

Rainfall maps for the month show a big gradient from northwest to southern Indiana. Over northwestern parts of the state, six to ten inches of rain fell over the month, while along the Ohio River amounts were generally less than a quarter inch. Two to three inches of rain was common along an area from southwest of Lafayette to Fort Wayne, and this was the area that received near normal precipitation for the month. Northwest parts of Indiana wound up with over 5 inches above normal rain for the month, while southern parts of the state including parts of the Hoosier National Forecast ended the month three to four inches below normal.

Over the course of the month, the severity and extent of the drought expanded with widespread abnormally dry conditions and pockets of moderate drought spreading.

Across southern Indiana near the Ohio River, conditions kept getting drier with no rain and hot temperatures. Severe drought levels developed in a small area near the Ohio River at the end of the month. By the end of September, several counties across southern Indiana had declared burn bans.

## *October*

Much of the month remained dry across central Indiana with several rain events bringing the occasional relief to the ongoing drought conditions. The month began with much above normal temperatures, as highs for the first two days of the month topped out at 92 degrees, a new record for the latest 90 degree day at Indianapolis. Temperatures dropped some from there but remained above normal for the first 10 days of the month. After that, most of the remainder of the month saw near to just below normal temperatures. The heaviest rain occurred during the last 2 weeks of the month bringing around an inch and a half to five inches of rainfall to central Indiana over the course of three events.

While earlier in the month some isolated or minor rainfall events occurred, the first widespread significant rainfall for central Indiana arrived October 21st. On October 21-22, a strong frontal system moving through the Great Lakes brought rainfall of 1 to 2 inches across much of southern Indiana, but little if any fell along the Ohio River. Most of central Indiana saw between half an inch and an inch and a half, with lesser amounts across northern Indiana.

A heavy rain event began late the night of October 25th and continued throughout the day on the 26th. This brought from three quarters to over three inches of rain to central Indiana, with Gulf moisture drawn northward ahead of a cold front and interacting with a stalled warm front and slow moving upper wave. The highest amounts fell across central and western portions of the forecast area. Even with this heavier rainfall, area rivers and streams remained within their banks as much of the rainfall was absorbed by the dry ground and produced little runoff. Also of note with this system were wind gusts of 40 to 50 mph during the evening of the 26th in the wake of the cold frontal passage which produced a bit of tree damage and some power outages across the area.

The final rain event of the month arrived on October 30th ahead of a strong frontal system. Total precipitation amounts ranged from around half an inch to an inch across much of central Indiana, with one to two inches across north central and northern parts of the state. This system started with rain on the 30th, which transitioned to snow on Halloween day as a strong cold front moved through the state. These were the first snowflakes of the season seen in central Indiana, and measurable snow of a tenth to a few tenths of an inch was seen across northern and central portions of the area, with 0.8 measured from a CoCoRaHs observer at Kokomo. Most of the area saw snowflakes, but with the warm ground and rain beforehand most of the snow melted before it could accumulate. Some central Indiana cities and towns postponed Trick or

Treating due to the forecast of 35 to 45 mph wind gusts and wind chills in the 20s and falling during the afternoon and evening.

These rounds of rainfall, along with near to just below normal temperatures over the second half of the month, improved drought conditions across much of the state.

## **November**

Precipitation across Indiana for the month of November varied across the state, with a significant gradient from north to south. Northern portions of the state saw below normal precipitation, with amounts of 1.5 to two inches common, which was around one to two inches below normal. In central portions of the state, near normal precipitation amounts of three to four inches were seen. Across southern Indiana, four to six inches was common, with a swath of six to eight inches surrounding the Jasper area. These amounts exceeded normal from between half an inch to over two inches. After the increase in precipitation during the second half of October, these rainfall amounts along with decreasing temperatures were enough to bring drought to an end across the state.

A potent upper level low pressure early the week of Thanksgiving brought rainfall amounts of half an inch to 1.5 inches. Another wet system arrived for the weekend after Thanksgiving as a strong and broad upper low moved through central Indiana. This brought over two inches of rain to southern portions of central Indiana, with half an inch to 1.5 inch amounts central and 0.25 to 0.5 inches north. These rainfall amounts in the southern counties prompted an areal flood advisory to be issued for expected nuisance flooding across southwestern and southern counties which is the first time in several months that any flood product was necessary. Minor flooding was briefly reached on Beaver Creek at Shoals. This system was also the final push necessary to bring rises on the lower White and lower Wabash which would result in minor flooding arriving at the beginning of December.

## ***Rainfall Data for Other Sites in Central Indiana***

<b>Site</b>	<b>Fall 2019 Rainfall</b>	<b>Normal Rainfall</b>	<b>Diff. From Normal</b>
Indianapolis Int'l Arpt.	7.56"	9.94"	<b>-2.38"</b>
Lafayette	7.48"	8.52"	<b>-1.04"</b>
Muncie	5.19"	10.83"	<b>-5.64"</b>
Terre Haute	10.06"	9.33"	<b>+0.73"</b>
Bloomington	10.25"	10.82"	<b>-0.57"</b>
Shelbyville	8.63"	10.01"	<b>-1.38"</b>
Indianapolis – Eagle Creek	7.68"	9.06"	<b>-1.38"</b>

## ***Major Weather Events***

The fall was very quiet across central Indiana with respect to severe weather.

Strong thunderstorms with gusty winds occurred on a few days during September, and a broken line of showers with a few thunderstorms brought gusty subsevere winds to the region during the early morning of November 27<sup>th</sup>.

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 2019-2020 Outlook for Central Indiana***

The official outlook for the 2019-20 winter season (December-February) from the Climate Prediction Center, indicates better chances for near to 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***  
***Questions should be referred to [w-ind.webmaster@noaa.gov](mailto:w-ind.webmaster@noaa.gov)***