

# Central Indiana Fall 2020 Summary

The following is a summary of weather conditions experienced in Central Indiana during the months of September, October, and November 2020.

## Temperatures

The fall of 2020 was tied for the **32<sup>nd</sup> warmest fall ever at Indianapolis** with an average temperature of **56.9°**. This is 1.7° above the normal fall average temperature of 55.2°.

### September

Seasonable temperatures in late August continued as the calendar turned to September as highs were generally in the low to mid 80s for the first several days of the month including Labor Day weekend. A brief surge in warmth followed just after Labor Day with highs peaking in the upper 80s and lower 90s on the 8th and 9th. As it would turn out, this would be the last time any portion of central Indiana made it to 90° for the rest of the month, a stark difference from Septembers in recent years which have had multiple days into the lower 90s throughout the month.

The passage of a frontal boundary would bring highs back into the 70s for the 10th and 11th. Over the next few days through mid-month, highs would oscillate between the upper 70s and mid 80s across much of the area. Lows ranged from the mid 50s to mid 60s through this period as well. Beginning on the 18th, temperatures would shift cooler and largely remain so for the rest of the month. Many locations would not reach 80° again after the 17th. Highs would remain in the 70s with even a few days in the mid and upper 60s throughout most of the last two weeks of the month. Lows in the 40s and 50s were common as well, although a few spots cooled into the upper 30s on the mornings of the 19th and 20th with patchy light frost.

Indianapolis was only able to make it to 90° on the 8th, marking the least number of 90°+ days in September since 2016. There were also five mornings throughout the month where lows fell into the 40s, the most in September since 2014.

### October

The month started out cool in the wake of a cold front. Highs the first few days of October ranged from the middle 50s to middle 60s with lows dipping down into the mid and upper 30s and providing the first instances of frost for the fall. A few locations fell close to the freezing mark on the morning of the 5th, the coolest morning of the first two weeks of the month. Beginning on the 6th however, an extended period of warm, dry weather commenced that would last through the middle of the month. Highs routinely ranged between the middle 70s into the 80s. The 7th and the 9th would bring the warmest daytime temperatures of October with highs peaking in the middle to upper 80s. Portions of south central Indiana took a run at 90° on the afternoon of the 9th. With a dry airmass in place, lows fell generally into the 40s and 50s most nights through this period.

The passage of a strong cold front early on the morning of the 15th offered a transition to a much cooler weather pattern that would largely take hold of the Ohio Valley for much of the rest of October. The first hard freeze of the fall for many came on the mornings of the 16th and 17th as many locations fell into the middle and upper 20s. Highs were generally in the 50s to low 60s from the 16th through the 21st with some locations struggling to get out of the 40s on the 19th as central Indiana experienced the first widespread, and at times, heavy rainfall for most of the area since the middle of August. A brief, but notable warmup came for the 22nd and 23rd as much of the region enjoyed their last 80° day of the season.

A strong cold front brought another round of rainfall on the afternoon and evening of the 23rd along with a 25 to 30 degree drop. Beginning on the 24th, highs would generally remain below 60° through the rest of the month. Another hard freeze would impact the entire region on Halloween morning, effectively ending the growing season in southeast portions of central Indiana that had not been impacted by the earlier cold on the 16th and 17th.

Much of the area would see monthly temperatures generally close to average, anywhere between 1° below normal and 2° above normal.

## **November**

November started out chilly with highs generally in the upper 40s and lower 50s. The cooldown was short lived however, as an extended period of dry and unseasonably warm weather commenced on the 3rd and would continue until a cold front passed late in the evening on the 10th. Multiple consecutive days in the 70s were common with the peak of the warmth coming on the 8th as temperatures rose into the upper 70s and lower 80s. Many locations experienced their warmest temperatures for so late in the fall. Indianapolis set record high temperatures on three consecutive days from the 8th through the 10th.

Temperatures returned to seasonable levels in the wake of the cold front late on the 10th but remained mild with daytime highs generally in the 50s and lower 60s and lows

in the upper 20s and lower 30s through the middle part of the month. Another surge of warmer air came north into the Ohio Valley on the 19th and 20th with highs rising into the middle 60s. The onset of clouds and rain on the 22nd would drop temperatures back into the 50s, with the passage of a cold front on the 23rd lowering temperatures even further. The remainder of the month was generally cool with highs ranging from the 40s into the lower 50s. Temperatures briefly rose into the mid and upper 50s on the afternoon of the 25th ahead of strong low pressure and an associated cold front.

Despite the cooler weather the last week of November, it was a warm month with average temperatures generally 4 to 6 degrees above normal. For Indianapolis, the 6 days with temperatures at 70° or warmer was the most in November since 2010. The month ended up as the 8th warmest November on record in Indianapolis. Interestingly, four of the top ten warmest Novembers in the 150 year period of record have occurred over the last decade: 2011, 2015, 2016 and now 2020.

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

Site	Fall 2020 Temperature	Normal Temperature	Diff. From Normal
Indianapolis Int'l Arpt	56.9°	55.2°	<b>+1.7°</b>
Lafayette	56.9°	54.4°	<b>+2.5°</b>
Muncie	57.2°	54.4°	<b>+2.8°</b>
Terre Haute	56.6°	53.9°	<b>+2.7°</b>
Bloomington (*)	57.2°	54.7°	<b>+2.5°</b>
Shelbyville	57.7°	54.5°	<b>+3.2°</b>
Indianapolis – Eagle Creek	56.7°	55.3°	<b>+2.4°</b>

(\*) - Bloomington temperature data missing on September 19.

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

Site	Warmest Temperature	Coldest Temperature
Indianapolis Int'l Airport	90° on 9/8	26° on 11/2
Lafayette	89° on 9/3 and 9/8	24° on 11/2 and 11/14
Muncie	90° on 9/8	24° on 11/14
Terre Haute	92° on 9/8	22° on 11/14

Bloomington	91° on 9/8	24° on 11/2
Shelbyville	90° on 9/8	24° on 11/14
Indianapolis-Eagle Creek	90° on 9/8	26° on 11/14

## Precipitation

Overall this was the **69<sup>th</sup> wettest fall on record at Indianapolis**. The total rainfall for Indianapolis this fall was **9.12"**. This was 0.82 inches below the normal fall rainfall total of 9.94 inches.

### September

September ranked as the driest September and the fourth driest month on record for Indianapolis with just 0.12" of rainfall. It was one of the driest Septembers for much of west central Indiana as well with most areas receiving less than a quarter inch. Higher rainfall amounts approaching 3 inches occurred in the far northern and southern portions of central Indiana. A locally heavier amount of rain fell across portions of northern Tipton County on the afternoon and evening of the 7th which led to amounts near 7 inches for the month.

The first few days of the month, light rain fell across much of central Indiana with rain amounts generally less than a tenth of an inch. The first significant rainfall of the month fell during the late evening hours of September 7th with the heaviest rainfall occurring in north central Indiana. Almost 6 inches of rain fell in the small town of Windfall in northern Tipton County. Some minor flooding was noted within the town but with the dry antecedent conditions, impacts were fairly minimal. Additional rain and storms impacted north central Indiana on the afternoon and evening of the 8th.

Much of the middle to latter portions of the month remained dry with small rain events on the 12th and 28th . Each of these rain events were generally less than a quarter of an inch.

With little to no rainfall during much of September, drought conditions began to worsen with areas of moderate drought (D1) expanding into west central Indiana by the end of the month. Burn bans began in Martin County on the 10th and by the end of the month had expanded to 10 of the 39 counties in the Indianapolis forecast area.

### October

After a dry start, October saw significantly more rainfall than previous months as a much more active weather pattern developed for central Indiana. A few moderate to heavy

rain events over the second half of the month brought beneficial moisture to central Indiana, and finally brought some improvement to the dry conditions across most of the state. At the Indianapolis International Airport, the first eleven days of the month had no measurable precipitation, exacerbating drought conditions across much of the state.

After a couple of insignificant rains, a cold front moved through central Indiana on the 18th, bringing some widespread rain to the area. This front then stalled near the Ohio River and moved north and south across the area for a few days, serving as a focus for areas of moderate to heavy rain from the 19th through the 21st. Rainfall totals lined up in a southwest to northeast track. Total rainfall amounts during this period were 1 to 2 inches in the far northwest, with 2 to 2.5 inches central, 1.5 to 2 inches south central, and 2 to 2.5 inches far south, with locally higher amounts along the Ohio River.

Another cold front moved through on October 23rd and brought between a quarter inch (west) and three quarters of an inch of rainfall across the region. However, this event had embedded convection which brought locally higher amounts that prompted a few areal flood warnings and a flash flood warning for amounts of one to more than three inches.

On the 29th, moisture from the remnants of Hurricane Zeta made its way north to interact with a cold frontal boundary approaching the state from the west and produced another round of moderate to heavy rainfall across central and southern Indiana. While only a quarter inch or less fell across the northwestern counties, around an inch to 1.5 fell from a Terre Haute to Muncie line, with two to three inches common south of that line. The highest amounts from this event fell in an area around Evansville, with several observations of over four inches around the city and even a couple of water rescues reported in that area of Posey County.

Total rainfall amounts for the month, then, ended up being much lower across the northwestern counties. Northwest portions of Warren, Tippecanoe, and Carroll counties saw around an inch and a half, but amounts increased significantly heading southeast from there. Two to four inches of rain was common in areas such as Lafayette and Kokomo. Four to six inches of rain was common across the rest of the area, with a couple of stripes of 6 to 8 inches as well, especially across the southernmost counties in areas like Vincennes and Seymour. Thus rainfall amounts were over an inch to two inches above normal across much of central Indiana for the month of October, with only the far northwest portions of central Indiana ending the month below normal. At Indianapolis, the total rainfall of 5.35" was the 14th wettest October on record.

## **November**

Rainfall for the month of November was quite variable across the state. Precipitation totals for the month ranged from 1.5 to 3 inches over an area north of a line approximately from Terre Haute to Crawfordsville to Kokomo. South of that line amounts ranged from 3 to 6 inches, with another dry pocket of 2 to 3 inches around an

area from Seymour stretching southwestward. A large swath of near normal to an inch or so above normal precipitation was found along a line centered from south of Terre Haute to Indianapolis to Muncie. Another area of similar values was found over northeastern parts of the state. Southeast of the aforementioned line, precipitation was one to two inches below normal, and this was the case northwest of the line as well. For Indianapolis International Airport, the month ended with nearly exactly normal precipitation for the month with a departure from normal of -0.05 inches.

The first organized precipitation producing system of the month moved through the area on November 10th and 11th, with a strong cold front plowing through central Indiana late on the night of the 10th. Much of central Indiana saw around a quarter inch of rain with this system, along with some embedded thunderstorms. A low pressure system with a slow moving front moving through on the 14th and 15th brought between half an inch and an inch of rain to much of central Indiana.

Larger rainfall events came primarily over the last third of the month as the pattern transitioned to a more active one. On November 21-22 (ending the morning of the 23rd), a system brought between 0.75 inches and 1.75 inches to central Indiana, with lesser amounts to the north and south. A low pressure system moving through on the 24th and 25th brought rainfall amounts from about three quarters of an inch to almost 2 inches, with locally higher amounts under the heavier storms.

The first measurable snowfall of the year for much of central Indiana came to end the month of November as a low pressure system from the southeastern U.S. came north as an upper trough swung southeast out of central Canada. This system produced more snowfall as it got east into Ohio, but still managed to produce from a trace to a few tenths of an inch over central portions of the forecast area, with more than an inch along the Indiana/Ohio border.

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

<b>Site</b>	<b>Fall 2020 Rainfall</b>	<b>Normal Rainfall</b>	<b>Diff. From Normal</b>
Indianapolis Int'l Arpt.	9.12"	9.94"	<b>-0.82"</b>
Lafayette	7.77"	8.52"	<b>-0.75"</b>
Muncie	8.96"	10.83"	<b>-1.87"</b>
Terre Haute	9.16"	9.33"	<b>-0.17"</b>
Bloomington	8.74"	10.82"	<b>-2.08"</b>
Shelbyville	7.65"	10.01"	<b>-2.36"</b>
Indianapolis – Eagle Creek	10.07"	9.06"	<b>+1.01"</b>

## ***Major Weather Events***

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

Strong thunderstorms with gusty winds occurred on a few days early in September, including on Labor Day. A thunderstorm briefly intensified to severe levels over Tippecanoe County on the afternoon of the 8th, producing golf ball size hail. Otherwise, no severe weather occurred in central Indiana in September.

Strong storms on the morning of October 21st knocked down a few trees over the northern half of central Indiana. Storms produced hail on the afternoon of October 23rd, with up to quarter size hail reported in Hancock and Lawrence Counties. Two construction workers suffered injuries from a lightning strike in Bargersville in Johnson County on the 23rd as well.

Scattered strong storms occurred on the afternoon of November 10th and again on the morning of November 15th across parts of central Indiana. These storms produced gusty winds and in some cases, small hail. On the evening of November 25th, a line of storms produced strong winds over southeast portions of central Indiana.

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 2020-2021 Outlook for Central Indiana***

The official outlook for the 2020-21 winter season (December-February) from the Climate Prediction Center, indicates better chances for near to above 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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