

Central Indiana Summer 2017 Summary

The summer of 2017 ended up cooler and wetter than normal for many locations, even with a shift to much drier conditions in late July and August. The Indianapolis International Airport made it to 90 degrees only 8 days throughout the summer. The warmest high at Indianapolis was 91 degrees on July 21 and August 20, the lowest top summer daily high temperature since 2004, a year when Indianapolis failed to reach 90 degrees at all.

Much of the first half of the summer continued the very wet pattern established during the spring, with heavy rain and thunderstorms impacting much of central Indiana. With the exception of parts of west central and southwest portions of the area, many locations received between 10 and 15 inches of rainfall through the middle of July. The pattern flipped to a much drier weather regime from late July through August, with Indianapolis experiencing their first month with below normal precipitation in six months in August.

The following is a summary of weather conditions experienced in Central Indiana during the months of June, July, and August 2017.

Temperatures

The summer of 2017 was tied for the **69th coolest summer ever at Indianapolis**, with an average temperature of 73.8 degrees. The normal summer average temperature is 73.9 degrees, making this summer just slightly below normal. Average temperatures across central Indiana for the summer generally ranged from near normal to 2 degrees below normal.

June

June started out with variable temperatures during the first third of the month. Temperatures varied from the lower 70s to around 90 during this period.

However, cooler temperatures were a thing of the past by the middle third of the month. High pressure over the southeast USA pumped warm and humid air into central Indiana. Temperatures were above average for much of the period, with highs reaching the lower to middle 90s at times. Indianapolis recorded its first 90 degree day of the

year on the 12th, with another 90 degree day just a couple of days later. Heat indices near 100 degrees were observed at some locations thanks to the humid air.

A change in the upper flow allowed cool Canadian air to dominate for a good portion of the last third of the month. Temperatures were around 10 to 15 degrees below normal for a few days around the 26th of the month. Some areas, such as Lafayette, had low temperatures in the 40s. Indianapolis' low of 51 on the 27th was just 3 degrees above the record low for the date.

The end of the month saw a return to more seasonable conditions with highs in the middle to upper 80s and more humidity.

July

July was a near average month for temperatures across central Indiana as extended heat waves were tempered by a nearly continuous active pattern that saw rain and thunderstorms impact throughout the month. Most locations finished within a degree or so of average for July.

Highs were commonly in the 80s throughout the month with the hottest weather being confined to just a few days during the third week of the month, from July 20 to 22. The southwest half of central Indiana was more greatly impacted by the heat as storms tracked further northeast across the region. Temperatures rose into the low and mid 90s, and the combination of high humidity levels caused heat indices to peak from 100° to 105° during the afternoons. Indianapolis only made it to 90° or warmer on four days during July, bringing the annual total for 2017 to 6 days.

The passage of a strong cold front on the 27th brought the coolest weather of the month during the last few days of July. Highs on the 29th largely remained in the upper 70s. Lows were largely in the 60s and 70s throughout July, but temperatures did fall as low as the mid 50s in many locations on the mornings of the 29th and 30th.

August

August saw frontal boundaries pass through central Indiana repeatedly, resulting in a very pleasant month with no extensive period of hot weather impacting the region. After a seasonable start to August, daytime temperatures fell back into the 70s from the 4th through the 6th behind the first of these cold fronts. Beginning on the 7th, highs rebounded into the low and mid 80s through the middle of August with lows ranging generally from the mid 50s to mid 60s. Humidity levels were low throughout much of this period as well.

The hottest stretch of the month came during the third week of August as highs rose into the upper 80s and lower 90s. Most locations experienced their warmest day on the

20th with most of central Indiana topping the 90° mark. Much of central Indiana warmed to near 90° on the 21st, the day of the solar eclipse. The region experienced roughly 90-95% coverage of the eclipse, with temperatures falling 5 to 8° and a noticeable drop in humidity levels in the 30 to 45 minutes leading up to the mid afternoon peak.

Temperatures rose once again once the eclipse ended. The passage of yet another stronger cold front on the 22nd once again knocked back the warm and humid airmass from the region, with highs reverting back into the upper 70s and lower 80s. Daytime highs would remain in general no warmer than 85° for the rest of the month with overnight lows returning to the 50s and 60s. A quick blast of cooler Canadian air brought lows down into the upper 40s and lower 50s for many locations on the 24th and again on the 26th.

Overall, temperatures averaged about 1 to 2° below normal for August across central Indiana. Indianapolis only made it to 90° on two days during the month, with just 8 days of 90° for the 2017 summer.

Temperature Data for Other Sites in Central Indiana

Site	Summer 2017 Temperature	Normal Temperature	Diff. From Normal
Indianapolis Int'l Arpt	73.8	73.9	-0.1
Lafayette	71.1	73.1	-2.0
Muncie	73.0	72.8	+0.2
Terre Haute	73.3	73.4	-0.1
Bloomington	72.9	72.8	+0.1
Shelbyville	73.1	72.7	+0.4
Indianapolis – Eagle Creek	73.7	73.9	-0.2

Summer Extremes Across Central Indiana

Site	Warmest Temperature	Coldest Temperature
Indianapolis Int'l Airport	91 on 7/21 and 8/20	51 on 6/1 and 6/27
Lafayette	92 on 6/12 and 6/13	45 on 6/1
Muncie	93 on 6/12	49 on 6/8 and 8/26

Terre Haute	94 on 6/12, 6/14 and 7/21	48 on 6/27
Bloomington	94 on 7/21 and 7/22	48 on 6/8
Shelbyville	93 on 6/12	50 on 6/1
Indianapolis-Eagle Creek	91 on 6/12 and 8/20	50 on 6/1

Rainfall

Overall this was the **24th wettest summer on record at Indianapolis**. The total rainfall for Indianapolis this summer was 17.51 inches. The normal rainfall total for summer is 11.93 inches, which made this summer in Indianapolis above normal by 5.58 inches. Rain was evenly distributed throughout the summer, with the second half of the summer seeing wetter conditions and more frequent storms.

June

June monthly totals ranged from near 2 inches in portions of northern and southwest Indiana to more than 14 inches in Benton County in northwest Indiana. Many areas received 3 to 6 inches for the month. Much of June's rainfall was concentrated in the 11-day period from the 13th-23rd, although some areas received additional heavy rain on the 30th.

The dry period during the last week of May continued in much of Indiana through June 12th. By the 13th, nearly one-third of the state was abnormally dry. Relief came quickly to most areas as much of the state received one-half to over two inches of rain from the 13th-15th. Rainfall covered nearly the entire state on the 14th and ended a nearly three week dry spell in the Vincennes area of southwest Indiana.

The second significant rain event of June occurred on the 23rd. The combination of a cold front and the moisture from a tropical storm dumped heavy rains of 2 to more than 5 inches in portions of north central, east central and southeast Indiana.

After nearly 6 days of generally dry weather, rainfall of one-half to over 4 inches fell mainly near and north of I-70 in central and northern Indiana on the last day of June. The total of 2.15" at Indianapolis on the 30th set a new record rainfall amount for the date.

Brief river flooding returned to portions of the Wabash, East Fork White, White and Muscatatuck River during the month following the heavy rains. Flooding lasted from 1 to 4 days. Most flooding ended by the 30th.

July

Monthly precipitation for July was normal to above normal for more than half of Indiana. Monthly totals ranged from one and a half inches to more than a foot. The highest and lowest monthly totals were 30 miles apart and located in southwest Indiana. Many areas received 3 to 8 inches for the month.

There were three heavy rain periods during July where total rainfall for the event approached or exceeded 6 inches. The first was on the 6th and 7th when rains of 1 to nearly 6 inches fell in less than 2 days in north central, central and east central Indiana.

After less than 3 days of dry weather, rains of 1 to nearly 8 inches fell in much of central Indiana in nearly 3 days from the 11th through the 13th. Much of this rain fell on the 11th when portions of north central Indiana and all of the Indianapolis metropolitan area received 3 to more than 7 inches of rain. The Indianapolis airport set a daily rainfall record for the 11th with 3.78 inches.

The last heavy rain period was on the 22nd and 23rd when rains of 2 to 6 inches fell in northwest and south central Indiana. The heavy rains struck northwest Indiana first on the 22nd and after less than a day, heavy rains fell in south central Indiana on the 23rd.

River and small stream flooding followed all the heavy rain events during July. The most widespread flooding followed the rains on the 11th. River flooding lasted from 5 to 8 days along portions of the White River in southern Indiana and the Wabash River in western Indiana.

The 6.18" of precipitation received in Indianapolis during July brought the annual total so far up to 36.99". Only four years on record have been wetter through the first seven months of the year, all occurring in the 1870s and 1880s!

August

Monthly precipitation for August was below normal for most of Indiana. Monthly totals ranged from a half of an inch in southwest Indiana to over 8 inches in northwest Indiana. Many areas received 1 to 4 inches of precipitation during the month.

A dry spell began on July 24th in much of central and southern Indiana and continued through the end of August. Approximately half of this area received less than 2 inches of rainfall during this 39-day period. For the Indianapolis area, the first 21 days of August were the driest since 1992. Rainfall of 1 to 3 inches on the 29th in east central and portions of central Indiana including the Indianapolis airport provided some relief to the dry conditions.

There were no widespread heavy rain events during August. The only two large rain events of the month occurred in the last third of the month. Rains of 3 to more than 6 inches fell from late on the 20th through the 22nd in Benton County and surrounding

areas in northwest Indiana. A week later, rains of 2 to more than 4 inches fell on the 29th in Allen County in northeast Indiana.

Abnormally dry areas expanded during August. By the 15th, portions of west central and central Indiana were included in the abnormally dry areas in the state. The Indiana Crop Report of August 28th stated that nearly 50% of the agricultural land in the state was dry. The US Drought Monitor for the 29th indicated about 15% of the state was abnormally dry.

Brief high water followed the heavy rains in Benton County. Big and Little Pine Creeks in western Indiana crested near to slightly above flood stage on the 22nd and 23rd. Most stream levels slowly declined during August.

Rainfall Data for Other Sites in Central Indiana

Site	Summer 2017 Rainfall	Normal Rainfall	Diff. From Normal
Indianapolis Int'l Arpt.	14.48	11.93	+2.55
Lafayette	15.98	11.53	+4.45
Muncie	15.32	12.34	+2.98
Terre Haute	12.71	12.84	-0.13
Bloomington	7.76	13.30	-5.54
Shelbyville	14.27	12.50	+1.77
Indianapolis – Eagle Creek	10.30	11.84	-1.54

Major Weather Events

June

June was pretty quiet in terms of severe weather. There were a few rounds of strong thunderstorms, but only a few severe storms occurred during the month. On June 13th, isolated severe storms damaged a barn and brought trees down in Johnson County, and one inch hail was reported in Boone County. On June 16th, storms brought down tree limbs in Fountain County.

July

It was an active month for severe weather across central Indiana. The first big event of the month occurred on the afternoon and evening of July 7th as storms produced

damaging winds and large hail across the region ahead of a cold front. On the evening of July 10th, scattered severe storms developed over northern portions of central Indiana along a nearly stationary warm front. The storms produced several funnel clouds and an EF0 tornado across far eastern Carroll County, continuing and intensifying as it moved into Cass County.

The most active day of the month was arguably on July 11 as storms repeatedly impacted portions of central Indiana including the Indianapolis metro area from sunrise until mid-afternoon. A bowing line of storms produced damaging winds over west central Indiana during the early afternoon. The bigger impact was exceptionally heavy rainfall that caused flooding across the area. Rainfall estimates peaked at 6 to 7 inches over Johnson and Morgan Counties with Indianapolis officially setting a daily record for July 11 with 3.78" of rain.

Additional severe weather occurred throughout the rest of July, but events were generally smaller in impact.

August

Little severe weather occurred through August as the month was dry for most of central Indiana. Scattered thunderstorms produced pockets of wind damage and small hail in the afternoon and evening of the first three days of the month. A strong storm over northern Marion County on the afternoon of the 1st produced a lightning strike just north of Broad Ripple that injured three people.

Fall 2017 Outlook for Central Indiana

The official outlook for the 2017 fall season (September-November) from the Climate Prediction Center indicates a slightly greater chance of above normal temperatures and an equal chance of above, near or below normal precipitation across central Indiana. At Indianapolis, the average temperature for the fall season is 55.2 degrees. At Indianapolis, the average precipitation for the fall season is 9.94" and 1.1" of snowfall.

Data prepared by the NWS Indianapolis Climate Team
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