

# Spring 2018 in Review

With June 1 comes the end of meteorological spring, a period defined as covering the months of March through May. It could be argued that the spring of 2018 wasn't really a spring at all as March and much of April were dominated by lingering winter conditions and May saw a complete flip to summer-like weather. One of the coldest Aprils on record was followed up by the warmest May on record with the monthly average temperature jumping a whopping 25° from April to May for much of central Indiana. The transition from much cooler to much warmer than normal temperatures resulted in average temperatures ending up within a degree or so of normal for the entire spring.

After a generally wet start to the spring season from March into early April, the overall pattern transitioned to much drier for the rest of April and all of May. Some locations experienced nearly as much rainfall on April 3 as would be received through the rest of April and all of May. Conditions had become abnormally dry across much of central Indiana as a result by the end of May.

Snow continued to impact the region throughout March and into early April, with much of central Indiana receiving a couple inches of snowfall on Easter. A big late season winter storm on March 24 produced up to a foot of snowfall in a narrow swath from northwest to southeast near Interstate 74. A large majority of the 14.2" of snowfall received officially at Indianapolis during the spring fell during this event, and would assist in making Spring 2018 the 5<sup>th</sup> snowiest on record.

The following is a review of weather conditions experienced in central Indiana during the 2018 spring season.

## *Temperatures*

### **MARCH**

A persistent upper level trough focused over the eastern part of the country kept much of March cooler than normal across central Indiana and the Ohio Valley. March 2018 ended up as the coolest March since 2014. Winter remained very much in control throughout the month.

Highs throughout the month were often in the 40s with just 30s mixed in occasionally. Temperatures in the 50s were common during the first few days of the month, then other than a couple of days mid-month, the 50s didn't return until the last week of March. Much of central Indiana did not get any warmer than the lower 60s throughout the entire month. The warmest high of 60° at Indianapolis on the 19<sup>th</sup> was the coolest

max temperature in March since 1970 when the warmest high only peaked at 58°. Northern portions of central Indiana, including Lafayette and Muncie, were unable to get any warmer than the 50s all month.

Lows throughout March were commonly below freezing until the last week of the month. Indianapolis only had three nights remain above freezing through the 26<sup>th</sup>. The 23 days with low temperatures at or below 32° in Indianapolis was the most in March since 2014. The average temperatures in March ended up being only 1-2° warmer than February.

## **APRIL**

The theme for April was that winter refused to give way to Spring. Temperatures were consistently chilly through much of the month, resulting in the coldest April experienced for many across central Indiana since 1997. For only the third year since 2000, Indianapolis failed to make it to 80° through the first four months of the year. Lows at or below 32° occurred on 14 nights during the month in Indianapolis, the most ever recorded for an April. Overall, temperatures ran 5 to 8 degrees below normal for the month, and were 12 to 13 degrees colder on average than April 2017.

The persistent upper level trough over the eastern U.S. that was so prevalent in March, lingered throughout much of the first half of April. With the exception of the 3<sup>rd</sup> when temperatures rose into the 60s and low 70s ahead of a cold front, highs largely remained only in the 40s through the first 10 days of the month. Lows were commonly in the 20s through this time period, with some locations even dipping into the teens on the morning of the 8<sup>th</sup>. A brief stretch of warmth arrived from the 11<sup>th</sup> through the 15<sup>th</sup> as the eastern trough finally relaxed. Highs peaked in the upper 70s and lower 80s on the 12<sup>th</sup> and 13<sup>th</sup>.

The passage of a cold front on the 15<sup>th</sup> ushered in another short period of much cooler temperatures on the 16<sup>th</sup> and 17<sup>th</sup>. Many locations received light snow on the 16<sup>th</sup> as highs held only in the 30s. The high of 37° in Indianapolis on the 16<sup>th</sup> was one of the latest occurrences in the spring of a day that cold. Only two other days in recorded history from April 16 through the rest of the Spring have ever been colder. Beginning on the 18<sup>th</sup>, temperatures were much closer to normal through the rest of the month, with highs largely ranging from the upper 50s through the mid 60s and lows in the 40s. There were still a few nights where temperatures fell into the 30s in late April, including a freeze for most of central Indiana on the morning of the 29<sup>th</sup> as temperatures fell into the upper 20s and lower 30s. Highs warmed into the 70s for the final day of April, signaling a transition to warmer weather to come as the calendar turns to May.

## **MAY**

After the persistent chilly weather that impacted central Indiana in March and April, a complete about face occurred in May as a large high pressure ridge at the surface and aloft developed across the Ohio Valley. The result was much warmer temperatures all month with temperatures that resembled summer. Average temperatures were generally 8° to 10° above normal for the entire month.

The coolest weather of the entire month occurred during the first week of May and in fact really wasn't all that cool. The combination of increased cloud cover and a few days with at least some rain kept highs in the 70s and lower 80s. After the 8<sup>th</sup> however, the more summer-like pattern took hold over the region and largely persisted for the rest of the month. Indianapolis would only have one day, the 18<sup>th</sup>, where highs remained below 80° after the 8<sup>th</sup>, a remarkable achievement. Additionally, the first morning of the month would be the only one with a low under 50°. Other locations across central Indiana would see a few mornings fall into the 40s during the first 10 days of May but beyond that, the entire area would see lows no cooler than the 50s.

Indianapolis broke several records for the month as a result. The average temperature of 72.6° obliterated the previous warmest May on record by nearly 2°, occurring back in May 1896. 25 days during the month experienced highs at or above 80°, also a new record. All 31 days during the month would end up above normal, the first time that had occurred since July 2012, the hottest month on record in the city's history. The high of 88° on the 13<sup>th</sup> marked the warmest Mother's Day on record, while the sizzling 95° registered on the 28<sup>th</sup> would easily establish the warmest Memorial Day on record at Indianapolis, and mark the third warmest May day on record and warmest temperature experienced in May since May 28, 1911 when the high reached 96°. High temperatures on the 28<sup>th</sup> rose into the upper 90s in some locations across central Indiana with Muncie hitting 98° and Shelbyville 97°.

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

<b>Site</b>	<b>Spring 2018 Temperature</b>	<b>Normal Temperature</b>	<b>Diff. From Normal</b>
Indianapolis Int'l Airport	52.9	52.6	+0.3
Lafayette (*)	49.8	51.5	-1.7
Muncie	52.1	50.9	+1.2
Terre Haute	53.0	53.0	+0.0
Bloomington	53.5	53.0	+0.5
Shelbyville	53.5	52.5	+1.0
Indianapolis – Eagle Creek	52.8	52.8	+0.0

(\*) – Lafayette low and average temperature data not available on May 31.

## ***Spring Extremes Across Central Indiana***

<b>Site</b>	<b>Warmest Temperature</b>	<b>Coldest Temperature</b>
Indianapolis Int'l Airport	95 on 5/28	19 on 3/14
Lafayette	96 on 5/28	18 on 3/9 and 3/14
Muncie	98 on 5/28	22 on 3/10, 3/16 and 4/8
Terre Haute	96 on 5/28	21 on 3/14
Bloomington	92 on 5/28	20 on 3/14
Shelbyville	97 on 5/28	23 on 3/14 and 3/18
Indianapolis-Eagle Creek	96 on 5/28	21 on 3/14

### ***Precipitation***

#### **MARCH**

Monthly melted precipitation totals ranged from 1.5 inches in northern Indiana to over 7 inches in central and south central Indiana. Monthly precipitation was near normal in northern Indiana and above normal in central and southern Indiana. Much of northern Indiana's precipitation occurred before the 17<sup>th</sup>, while most of central and southern Indiana's precipitation fell from the 16<sup>th</sup> through the end of March.

Monthly snowfall totals for March measured from less than an inch to over 17 inches in southeast Indiana. Heavy snow of more than 6 inches fell on the 11<sup>th</sup>, 20<sup>th</sup>-21<sup>st</sup> and 24<sup>th</sup> in portions of central and southern Indiana. Monthly snowfall ranged from near normal to near record levels for March in portions of southeast Indiana.

Rainfall of 1 to 4 inches from late on the 26<sup>th</sup> through early on the 30<sup>th</sup> caused the return of widespread flooding to central and southern Indiana. This high water continued into April. Melted precipitation totaled 2 to over 7 inches from the 16<sup>th</sup> through the 31<sup>st</sup> in central and southern Indiana.

Central Indiana experienced light snow at times through the first half of March, but the much greater impacts from snow came late month. Late season accumulating snow impacted central Indiana on the 21<sup>st</sup> and again more significantly on the 24<sup>th</sup>. Heavy, wet snow developed across mainly the southeast half of central Indiana on the 21<sup>st</sup> as low pressure passed through the Ohio Valley. Locations south and east of a

Bloomington to Muncie line received at least 4 inches of snow with locally higher amounts approaching 6 inches.

Just a few days later on the 24<sup>th</sup>, snow developed across portions of central Indiana ahead of an approaching area of low pressure. A narrow band of intense snow produced amounts of 8-12 inches along the Interstate 74 corridor, including the Indianapolis metro area. Snowfall rates of 2 inches or greater per hour occurred within this band. The 10.2 inches of snow at Indianapolis set the daily snowfall record and became the second highest one day total for the month of March. The 11.6 inches of snow recorded for the month at Indianapolis became the 6<sup>th</sup> snowiest March on record for the city.

## **APRIL**

Monthly melted precipitation totals ranged from around 2 inches in northwest Indiana to over 6 inches in central and southeast Indiana. Monthly precipitation was normal to above normal for central, southeast and extreme north central and northeast Indiana and below normal for the remainder of the state.

Much of central Indiana's rainfall occurred on the 3<sup>rd</sup> when the area received 2 to nearly 5 inches. The 3.90 inches that fell on the 3<sup>rd</sup> at Indianapolis area set a daily record for the month of April. Rainfall of one-half to slightly more than an inch fell in Indiana on the 14<sup>th</sup> and 15<sup>th</sup> and again in central and southern Indiana on the 23<sup>rd</sup> and 24<sup>th</sup>.

River flooding that began at the end of March became significant flooding in central and southern Indiana as a result of the 2 to 5 inches of rain that fell in central Indiana on the 3<sup>rd</sup>. A dry weather pattern from the 4<sup>th</sup> through the 13<sup>th</sup> allowed much of the flood waters to recede. Rains on the 14<sup>th</sup> and 15<sup>th</sup> of one-half to slightly more than an inch prolonged high water along the Wabash River. Flooding finally ended by the 22<sup>nd</sup>.

Monthly snowfall totals for April measured from a trace to over 7 inches in the Frankfort area of central Indiana. More than an inch of snow fell in portions of southern Indiana during the month.

The Indianapolis area received 2.6 inches during the month, the most for April since 3.3 inches in 1982. This was the 10<sup>th</sup> snowiest April of record since snowfall records began in 1884. The biggest snow of the month occurred during the evening of the 1<sup>st</sup> and early on the 2<sup>nd</sup> when up to 6 inches fell in the Lafayette and Frankfort areas. The Indianapolis weather office measured 2.1 inches on the 1<sup>st</sup>, the highest daily total for April since 2.7 inches on April 8, 1957.

## **MAY**

Monthly rainfall totals ranged from slightly over an inch in central Indiana to nearly 10 inches in southwest and extreme north central Indiana. Monthly rainfall was much below normal across most of the state except for northern and southwestern Indiana where rainfall was much above normal. This was the driest May since 1988 for Indianapolis.

Rainfall during the first 2 weeks of May was concentrated in northern Indiana. Much of this area received 3 to 8 inches of rainfall during this time, while most of central and southern Indiana measured less than an inch of rainfall. A dry spell prevailed over most of the state from the 15<sup>th</sup> through the 28<sup>th</sup>. Much of the area received less than an inch of rainfall. Rainfall during the first 28 days of May in many areas of central and southern Indiana totaled from 0.5 to 3.0 inches; less than half of the normal. As a result, abnormally conditions developed in parts of southwest and central Indiana.

The remains of Tropical Storm Alberto and other weather systems brought needed rains to the state from the 29<sup>th</sup> through the 31<sup>st</sup>. Rainfall totaled from a trace in portions of east central Indiana to 5 inches in southwest Indiana.

No river flooding occurred in central and southern Indiana during May. As May ended, most rivers and streams had shown little response to the recent rains. Streamflow was below normal in most of central and southern Indiana.

## ***Spring Precipitation Data for Sites in Central Indiana***

Site	Spring 2018 Precipitation	Normal Precipitation	Diff. From Normal
Indianapolis Int'l Airport	10.90	12.42	<b>-1.52</b>
Lafayette (*)	10.03	10.40	<b>-0.37</b>
Muncie (**)	8.45	11.03	<b>-2.58</b>
Terre Haute	11.65	14.15	<b>-2.50</b>
Bloomington	12.79	13.82	<b>-1.03</b>
Shelbyville	10.29	13.03	<b>-2.74</b>
Indianapolis – Eagle Creek	9.56	12.47	<b>-2.91</b>

(\*) – Lafayette precipitation data not available on May 31.

(\*\*) – Muncie precipitation data not available on May 19.

## ***Severe Weather***

The first severe weather of the year came on April 3 as central Indiana was impacted by a couple rounds of strong to severe thunderstorms during the afternoon and evening.

Large hail up to golf ball size and damaging winds occurred with these storms. The evening line of thunderstorms also produced two tornadoes; the first near Covington in Fountain County and the second to the northeast of Lafayette in Tippecanoe County. Both tornadoes produced EF0 damage.

Severe weather remained limited through the month by the abrupt transition to a more summer-like pattern. This resulted in isolated strong to severe storms on several afternoons through the month that produced wind damage and hail. The only substantial severe weather to impact central Indiana occurred during the afternoon and evening of May 31. A long-lived squall line tracked across the lower Ohio Valley and southern half of central Indiana during the afternoon, producing widespread wind damage. Additional storms developed north of the squall line and would also produce wind damage and large hail during the late afternoon and evening.

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

## **Indianapolis Data**

### **INDIANAPOLIS MARCH 2018 SUMMARY**

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
March 2018	38.9	4.07	11.6	0/0
Normal March	42.2	3.56	2.6	3/0
Difference from Normal	-3.3	+0.51	+9.0	-3/0

**March 2018 All-Time Ranks:**  
**Temperature: 56<sup>th</sup> Coolest**  
**Precipitation: Tied for 52<sup>nd</sup> Wettest**  
**Snowfall: 6<sup>th</sup> Snowiest**

### **INDIANAPOLIS APRIL 2018 SUMMARY**

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
April 2018	47.1	5.41	2.6	5/0
Normal April	53.0	3.81	0.2	10/5
Difference from Normal	-5.9	+1.60	+2.4	-5/-5

**April 2018 All-Time Ranks:**  
**Temperature: 8<sup>th</sup> Coolest**  
**Precipitation: 28<sup>th</sup> Wettest**  
**Snowfall: 10<sup>th</sup> Snowiest**

### INDIANAPOLIS MAY 2018 SUMMARY

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
May 2018	72.6	1.42	0.0	31/25
Normal May	62.7	5.05	Trace	20/8
Difference from Normal	+9.9	-3.63	0.0	+11/+17

**May 2018 All-Time Ranks:**  
**Temperature: Warmest**  
**Precipitation: 10<sup>th</sup> Driest**

### INDIANAPOLIS SPRING 2018 SUMMARY

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
Spring 2018	52.9	10.90	14.2	36/25
Normal Spring	52.6	12.42	2.8	33/13
Difference from Normal	+0.3	-1.52	+13.4	+3/+12

**Spring 2018 All-Time Ranks**  
**Temperature: Tied for 50<sup>th</sup> Warmest**  
**Precipitation: 74<sup>th</sup> Driest**  
**Snowfall: 5<sup>th</sup> Snowiest**

### **Summer 2018 Outlook for Central Indiana**

The official outlook for the 2018 summer season (June-August) from the Climate Prediction Center, indicates equal chances of near, above or below normal temperatures across central Indiana. At Indianapolis, the average temperature for the summer season is 73.9 degrees. The outlook also calls for a greater chance of near, above normal precipitation. The average precipitation at Indianapolis is 11.93”.

***Data prepared by the NWS Indianapolis Climate Team***  
***Questions should be referred to [w-ind.webmaster@noaa.gov](mailto:w-ind.webmaster@noaa.gov)***