

Spring 2015 in Review

With June 1 comes the end of meteorological spring, a period defined as covering the months of March through May. The spring of 2015 started out with a snow storm that saw the average snowfall for March in Indianapolis met in the first five hours of the month. Despite the chilly start to March, temperatures slowly warmed with many locations surpassing 70 degrees for the first time of the year by the middle of March. After a wetter April for many, May ended up a warmer and drier than normal month across central Indiana. As a result, the spring season averaged near to just above normal across the region. Most locations across central Indiana ended up 2 to 3 inches below normal on precipitation for the spring as well.

The following is a review of weather conditions experienced in central Indiana during the 2015 spring season.

Temperatures

MARCH

March began very cold in the wake of a snow storm that dropped several inches of snow on February 28th into March 1st. Strong high pressure expanded south into central Indiana and with a fresh snowpack present, highs bottomed out in the upper teens and 20s in many places on the 5th and 6th. The coldest morning of the month took place on the 6th with much of the area falling below zero. Temperatures began to recover on the 7th as warmer air arrived. Highs rose into the 40s in many places from the 7th through the 10th, enabling much of the snow to completely melt. High temperatures made it into the 60s across for the first time in 2015 across all but far northern sections of central Indiana on the 11th and 12th.

After a brief cooldown back into the lower and middle 50s as rain impacted the region, the warmest weather of the month arrived from the 15th and 16th with high pressure and southerly winds. Highs rose into the 70s across central Indiana on the 16th. The passage of a cold front early on the 17th brought an abrupt end to the early spring preview as highs fell back into the 40s. Highs briefly returned into the upper 50s and lower 60s on the 21st before more substantial cooling arrived for much of the rest of the month. The chilly unsettled weather reached its low point on the 27th when most areas remained in the 30s with cloudy skies and flurries. After the coldest March 27 in 40 years in Indianapolis, the morning low on the 28th missed tying the daily record low of 16 from 1887 by one degree. The return of high pressure and southerly winds brought a

warming trend to end the month, with highs warming into the 60s in most locations on the 30th and 31st.

APRIL

April started off warm as highs rose into the 60s and 70s over the first few days. Highs fell back briefly with the passage of a cold front from the 4th through 6th, with the warmest air of the month returning ahead of a strong cold front. Highs peaked in the upper 70s and lower 80s on the 9th, including Indianapolis which reached 80 degrees for the first time in 2015 on the 9th. Slightly cooler but seasonable weather followed for the next several days. Temperatures peaked once again in the mid and upper 70s on the 17th and 18th throughout central Indiana.

Low pressure tracking through the Ohio Valley brought the wettest day of the month for many locations on the 19th, and served to usher in a pattern change in the upper levels that maintained through much of the rest of the month as a broad upper trough developed over the eastern United States. This brought cooler temperatures to the Ohio Valley, with highs primarily in the 50s. There were a few frosty mornings as well with lows routinely falling into the lower and middle 30s. Temperatures began to recover the last few days of the month with many areas returning to the 60s during the day as the influence of the upper trough diminished across central Indiana.

Despite the cool finish to the month, the monthly average temperature for April was warmer than normal at Indianapolis for the first time since December.

MAY

After a chilly start in the 30s for much of the region on the morning of the 1st, May started out warm and dry as a large ridge of high pressure dominated across the region. High temperatures were mainly in the 70s through the 4th, then rose into the 80s for an extended stretch that lasted through the 10th and 11th. At Indianapolis, the 6 days of 80°+ highs was the most in the first ten days of May since 2001. Many locations reached their warmest temperatures of the month on either the 6th or 7th as highs made in into the mid and upper 80s.

The passage of a cold front on the 11th ushered in temperatures closer to normal for mid-May over the following week. With the exception of a brief return to highs in the lower 80s for many on the 15th and again on the 17th-18th, highs largely remained in the 60s and 70s. Cooler air again returned with the passage of a cold front late on the 18th. An upper level trough developed over the region and brought with the coolest daytime highs of the month coming as weak disturbances moved through the Ohio Valley. Highs remained only in the lower and middle 50s over much of the area on the 20th under cloudy skies with light rain, by far the coolest daytime high of the month. The departure

of the upper trough brought a return to warmer temperatures for the Memorial Day weekend.

Warmer and more humid conditions persisted through much of the rest of the month with highs in the 80s and lows in the 60s. The last day of May resembled mid-April as cloudy drizzly weather followed in the wake of a cold front. Early morning highs in the 60s fell into the upper 50s for much of the day.

Temperature Data for Sites in Central Indiana

Site	Spring 2015 Temperature	Normal Temperature	Diff. From Normal
Indianapolis Int'l Airport	53.5	52.6	+0.9
Lafayette	50.4	51.5	-1.1
Muncie	51.9	50.9	+1.0
Terre Haute	53.2	53.0	+0.2
Bloomington	54.0	53.0	+1.0
Shelbyville	54.6	52.5	+2.1
Indianapolis – Eagle Creek	52.7	52.8	-0.1

Spring Extremes Across Central Indiana

Site	Warmest Temperature	Coldest Temperature
Indianapolis Int'l Airport	86 on 5/6 and 5/7	2 on 3/6
Lafayette	85 on 5/7 and 5/29	-6 on 3/6
Muncie	88 on 5/7	2 on 3/6
Terre Haute	86 on 5/8 and 5/28	-6 on 3/6
Bloomington	87 on 5/7 and 5/8	-1 on 3/6
Shelbyville	90 on 5/7	-2 on 3/6
Indianapolis-Eagle Creek	85 on 5/7	1 on 3/6

Precipitation

MARCH

March melted liquid precipitation ranged from below normal in northern Indiana to much above normal in southern Indiana. Precipitation in central Indiana was normal to above normal. Monthly totals measured from one-half of an inch in extreme north central and northeast Indiana to over 8 inches in southwest Indiana. Much of the state received between 2 and 6 inches of liquid precipitation.

Extensive to significant river flooding returned to southern Indiana in March. With lowland flooding already in progress from melting snow and prior rainfall, rains of 1 to 4 inches on the 13th and 14th caused the highest river levels in southern Indiana since April 2014. Much of the southern half of Indiana received 1 to 2 inches of rainfall on the 25th and 26th as two separate low pressure waves tracked through the Ohio Valley. This kept river levels near or above flood stage in some areas, especially along the lower Wabash and White Rivers.

The active weather pattern of February continued into the first half of March. The largest snowfall of the season fell during the last hours of February and the first day of March in central Indiana. The central Indiana area received from 4 to 12 inches of snow. At Indianapolis, the monthly average snowfall of 2.9 inches was exceeded within the first 5 hours of the month. The 7.1 inches received from late on February 28th into March 1st brought the snow year total for Indianapolis up to 25.6 inches, just a few tenths shy of the snow year average.

Quickly following on the 4th and 5th, Indiana was on the northern fringe of an historic snowstorm in Kentucky. Extreme southwest and south central Indiana received nearly a foot of snow. Snowfall amounts decreased northward to only 1 to 3 inches along U.S. Highway 50 in southern Indiana.

As a result of these storms, monthly snowfall was above normal for nearly the entire state in March. Only portions of northern Indiana received normal to below normal snowfall. Totals ranged from around two inches in extreme northeast Indiana to nearly a foot in portions of central and extreme southern Indiana.

APRIL

April rainfall ranged from below normal in northern Indiana to much above normal in southern Indiana. Precipitation in central Indiana was normal to above normal. Monthly totals measured from near 2 inches in northern Indiana to over 12 inches in south central Indiana. Much of the state received between 3 and 8 inches rain.

Rain was frequent during April returning every 2 to 3 days. The heaviest rains fell from the 2nd through the 10th. Amounts varied from 2 inches in central Indiana to nearly 8 inches in southern Indiana. Heavy rains, exceeding 2 inches, fell on the 2nd and 3rd, and at times from the 7th through the 9th.

After the 10th, the intensity of the rains decreased but the frequency continued. By the 21st, small portions of south central Indiana exceeded a foot of rain for April. After a

brief dry spell from the 26th to the 29th, scattered showers and isolated thunderstorms returned at the end of the month with an upper level low tracking through the area.

Lowland river flooding quickly returned to southern Indiana following rains on the 3rd and continued nearly uninterrupted in southwest Indiana through the 26th. One death attributed to heavy local rains occurred on the 8th. A 75-year old woman in the Pittsboro area of Hendricks County slipped into a rain filled drainage ditch and drowned.

MAY

May rainfall ranged from below normal in central and southern Indiana south of U.S. Highway 36 to near normal to above normal in areas along and north of the highway in the remainder of the state. Monthly totals measured from less than an inch in the Connersville area of east central Indiana to over 9 inches in the Kentland area of northwest Indiana. Much of the state received between 2 and 5 inches of rain during the month.

Rainfall was rather infrequent and spotty during all of May except on the 30th. After a four week dry spell for many areas, beneficial rainfall of 0.50 inches to 5 inches fell in much of central and northern Indiana from repeated storms on the 30th. Large portions of southern Indiana, especially in the south central and southeast areas, missed this rain and received less than 0.25 inches.

Rainfall in excess of 3 inches on the 30th caused localized flooding in central and northern Indiana. Indianapolis doubled their monthly rainfall in only seven hours on the 30th. Near flood stage conditions followed along the Wabash River in western Indiana in early June as a result of this rain. Lowland flooding occurred at the end of May and early June along the Kankakee River in northwest Indiana. Even with the beneficial rains on the 30th, most locations were below normal for May.

Spring Precipitation Data for Sites in Central Indiana

Site	Spring 2015 Precipitation	Normal Precipitation	Diff. From Normal
Indianapolis Int'l Airport	9.98	12.42	-2.44
Lafayette(*)	7.21	10.40	-3.19
Muncie	11.86	11.03	+0.83
Terre Haute	11.73	14.15	-2.42
Bloomington(**)	10.99	13.82	-2.83
Shelbyville	11.02	13.03	-2.01
Indianapolis – Eagle	9.87	12.47	-2.60

Creek(***)			
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- (*) – Lafayette precipitation data not available on March 10.
(**) – Bloomington precipitation data not available on May 30 and 31.
(***) – Indianapolis-Eagle Creek precipitation data not available on March 10.

Severe Weather

No severe weather occurred across central Indiana during the month of March. Many locations did experience their first thunderstorms of the year during the early morning of March 25th.

Severe weather impacted central Indiana primarily in the first 10 days of April. The passage of a cold front on April 2nd brought thunderstorms producing large hail and at least one report of wind damage during the evening across southern portions of central Indiana.

Severe weather was much more extensive April 8th through the 10th as a frontal boundary remained across the area. Thunderstorms impacted the region the morning with numerous occurrences of quarter size hail and flooding from heavy rainfall. Trees were downed and several buildings were damaged over Rush County as the storms moved through mid-morning. Scattered thunderstorms redeveloped over central Indiana during the late afternoon and early evening. Many of the storms produced large hail, with golf ball size hail occurring in Greenwood and in Tippecanoe County near Clarks Hill, and baseball size hail near Unionville in Monroe County. A severe storm produced a microburst across southern Daviess County, with numerous trees knocked down.

A squall line moved into the region from the west along a strong cold front late on the evening of the 9th into the early morning hours of April 10th. These storms primarily produced wind gust up to 60-65 mph in a few locations along with a few reports of trees down. Small hail occurred in a few spots as well.

May was a relatively quiet month for severe weather across central Indiana. Scattered strong to severe storms on the evening of the 4th, 11th and 15th produced large hail and damaging winds over parts of the region.

The biggest severe weather event of the month occurred on the afternoon and evening of May 30th, as scattered strong to severe thunderstorms developed across the area ahead of low pressure. The storms pulsed in intensity, with several near and to the northeast of the Indianapolis metro area producing wind damage. Additionally, an intense storm briefly produced quarter size hail in southern Boone County. A brief EF1 tornado occurred in southeast Marion County during the evening where two boundaries from storms interacted. The tornado was on the ground for about a minute and traveled almost a third of a mile near Southeastern and Irvington Avenues. Two homes

sustained significant damage, with minor roof damage to a few other homes. Trees were downed along the path, and two vehicles were stacked on top of one another. Straight line wind damage to primarily trees and limbs also occurred over Franklin Township in southeast Marion County, extending to near New Palestine. For more information on the tornado in southeast Marion County, please visit <http://www.weather.gov/ind/may302015severe>

Indianapolis Data

INDIANAPOLIS MARCH 2015 SUMMARY

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
March 2015	39.2	3.53	5.9	1/0
Normal March	42.2	3.56	2.6	3/0
Difference from Normal	-3.0	-0.03	+3.3	-2/0

March 2015 All-Time Ranks:
Temperature: Tied for 59th Coolest
Precipitation: 68th Wettest
Snowfall: 26th Snowiest

INDIANAPOLIS APRIL 2015 SUMMARY

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
April 2015	54.5	4.00	0.0	7/1
Normal April	53.0	3.81	0.2	10/2
Difference from Normal	+1.5	+0.19	-0.2	-3/-1

April 2015 All-Time Ranks:
Temperature: Tied for 37th Warmest
Precipitation: Tied for 55th Wettest

INDIANAPOLIS MAY 2015 SUMMARY

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
May 2015	66.8	2.45	0.0	25/13
Normal May	62.7	5.05	Trace	20/8

Difference from Normal	+4.1	-2.60	0.0	+5/+5
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May 2015 All-Time Ranks:
Temperature: 24th Warmest
Precipitation: 36th Driest

INDIANAPOLIS SPRING 2015 SUMMARY

	Average Temperature	Total Precipitation	Total Snowfall	Highs at or above 70°/80°
Spring 2015	53.5	9.98	5.9	33/14
Normal Spring	52.6	12.42	2.8	33/10
Difference from Normal	+0.9	-2.44	+3.1	0/+4

Spring 2015 All-Time Ranks
Temperature: Tied for 34th Warmest
Precipitation: Tied for 53rd Driest
Snowfall: Tied for 29th Snowiest

Summer 2015 Outlook for Central Indiana

The official outlook for the 2015 summer season (June-August) from the Climate Prediction Center, indicates equal chances of above, below or normal temperatures and precipitation across central Indiana. At Indianapolis, the average temperature for the summer season is 73.9 degrees, and the average precipitation is 11.93”.

Data prepared by the NWS Indianapolis Climate Team
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