

Central Indiana January 2022 Climate Summary

55th Coldest on record at Indianapolis

Tied 17th Driest on record at Indianapolis

Temperatures

January 2022 was consistently cold, averaging 2.0 to 4.0 degrees below normal across central Indiana. The prevailing synoptic pattern included numerous upper-level troughs crossing the Mid-West whilst spinning around an upper low near Hudson Bay. This generally northwest flow kept Indiana moisture-starved while not favoring winter storm development. The passing upper troughs brought associated arctic surface high pressure. The troughs passing central Indiana did so at a quicker pace during the second half of the month, bringing more frequent tandems of light accumulating snow and subsequent very cold mornings. Unseasonable conditions were uncommon, with very mild temperatures only recorded on the 1st and 12th, and the cold only dropping to frigid levels on the 6th-7th, 25th-26th and 28th-29th. January 2022 continued the cooling trend from January 2020's well above normal, and January 2021's above normal temperatures; it was the coldest January since 2018 (which averaged only 25.1°F at Indianapolis). January 2022 was the fourth-coldest at Indianapolis of the last ten years. By contrast, January 2017's and January 2020's average temperatures were 6.4 and 6.5 degrees above current (1991-2020) normals at Indianapolis, respectively.

January 2022's first two weeks saw temperatures see-saw between very mild and quite cold levels, while the remainder of the month was more consistently cold with the last week featuring occasionally clear conditions that promoted large diurnal spreads and a couple mornings near or below 0F. Most locations recorded 30 of 31 minimums at or below freezing; historically the Indianapolis Area only sees this in one of every 5 Januarys. Days held below freezing ranged from 10 at Terre Haute to 15 at both Lafayette and Muncie, with Indianapolis recording 12 maximums of 32F or lower. Such days at COOP stations ranged from only 6 at both Elnora (Daviess Co.) and Shoals 8 S (Martin Co.) to 22 at the Beck Agricultural Center 6 miles northwest of West Lafayette (Tippecanoe Co.).

The 1st was unseasonably warm for all but northwestern counties, if only due to the anomalously high early morning maximum temperatures that occurred just ahead of an approaching cold front. Bloomington hit 63F at 12:10 a.m. before Shelbyville peaked at 65F at 1:45 a.m. The 2nd – 5th was seasonably cool, although all 1st-order airports were held below freezing on the 3rd; Indianapolis only reached 31F and the lowest observed maximum was 27F at several COOP stations, including the Davis Purdue Ag center 5 miles NNW of Farmland (Randolph Co.). An arctic blast then impacted the region from late on the 5th – 7th, with Indianapolis' drop from 41F to 15F representing most other locations; the Columbus COOP site (Bartholomew Co.) saw the greatest reported change, (-) 29F. The 6th's maximums only reached the upper teens, with 18F at Indianapolis, while the coldest daytime, 14F, was recorded at both the Rockville (Parke Co.) and Tipton 5 SW (Tipton Co.) COOP sites. The 7th was the coldest morning since February 2021, with most spots north of Interstate 70 near 0F; sub-zero readings included -4F in Rockville, -2F at Shakamak State Park (Sullivan Co.), and -1F at West Lafayette 6 NW. The 7th's highs reached only the upper teens to near 20F over most locales; Indianapolis reached 19F, while Rockville was held to 13F.

The 8th brought moderation amid broad warm advection, with most locations rising from the low- to mid-teens to near 40F; Bloomington reported the largest change, (+) 29F. Soon after, the next arctic air mass built into the United States, with readings dropping significantly from dawn on the 9th to dawn on the 10th; the greatest reported change was at Shakamak State Park, (-) 34F. Subsequent cold included the 10th's sub-freezing highs, which were as low as 25F at the Kokomo 3 WSW (Howard Co.) COOP site; and the 11th's morning lows that were near 10F, and as low as 3F at Rockville. Temperatures rebounded once again on the 11th as a warm frontal zone crossed the Mid-West, with most locations increasing 25-30 degrees, into the 30s by late evening. The 12th-13th was rather mild amid generally light southwesterly breezes, with the 12th's morning lows in the 30-35F range for most locales, and afternoon maximums as high as 50F at Bloomington and Terre Haute, while Shoals 8 S reached 56F. Seasonably chilly conditions were the rule during the 15th-18th.

A rather consistent flow of arctic high pressure promoted below normal readings for the entire region on 9 of the month's final 14 days. The next arctic air mass infiltrated central Indiana on the 19th-20th with West Lafayette 6 NW and Shakamak State Park both dropping from 45F to 8F for the largest change, (-) 38F. The 20th-22nd then featured morning lows generally in the low to mid teens, with lowest observations: 20th, Rockville 3F; 21st, West Lafayette 6 NW 5F; 22nd, North Vernon 2 ESE (Jennings Co.) 5F. Meanwhile high temperatures were held to the mid 20s for most locations through the 21st. The 23rd-24th was seasonably chilly.

On the 24th-25th, the next arctic blast had a generally less extreme temperature drop, but Shakamak State Park still saw a (-) 36F change. Some locations recorded their coldest morning of the month on the 26th – generally the Indianapolis metro and points west and south, with readings dropping to generally -5F to 5F, and West Lafayette 6 NW reporting -10F. The Lafayette airport reported a wind chill of -17F, and Castleton 2 S remarked "wind chill at 800 am -13F; sunny skies". Indianapolis dropped to 0F for the first time since 2/7/2021; with the last sub-zero reading having occurred on 1/31/2019. The 29th saw one last frigid morning, as arctic high pressure, now tracking well south of the region, brought most locations their coldest morning of the month. Morning lows of -5F to 5F were again common, with New Castle 3 SW

(Henry Co.) dropping to **-10F** and Kokomo 3 WSW **-8F**. Then, plentiful sunshine and modest westerly winds advecting noticeably milder air from the Plains, brought readings back to near freezing, with some of the colder locales rebounding (+) 25-30F. The month ended with seasonably cold temperatures on both the **30th** and **31st**.

January 2022's below normal temperatures were in sharp contrast to the anomalous warmth during December 2021, as well as the mild readings from January 2021.

Site	January 2022 Average Temp	January 2022 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	25.5	-3.0	61 on 1 st	0 on 26 th
Lafayette	22.9	-2.9	50 on 1 st	-6 on 26 th
Muncie (**)	24.8	-3.8	58 on 1 st	-2 on 26 th , 29 th
Terre Haute	26.2	-2.5	62 on 1 st	1 on 26 th
Bloomington	26.7	-3.6	63 on 1 st	-3 on 29 th
Shelbyville	27.5	-2.2	65 on 1 st	-2 on 29 th
Indianapolis Eagle Creek	26.1	-2.7	61 on 1 st	1 on 26 th

** – Temperature data is missing for **Muncie's** 1/12 max temp

At Indianapolis, January 2022's daily average temperatures were above normal on 10 days, below normal on 19 days, and at normal on 2 days. It was the **55th coldest** January for the Indianapolis Area since weather records began in 1871, placing it in the 63rd percentile.

Precipitation

Following the release of the new 30-year (1991-2020) climatological normals, January is now normally the third-driest month across most of central Indiana. Normally around 2.15-3.50" of precipitation falls across the region in January, which includes the typical north (drier) to south (wetter) gradient. However, January 2022's totals were well below these normal values, with only **1.13"** falling at Indianapolis International Airport, **36% of normal**. This was the driest January at Indianapolis since 2001's 0.74"; with all other 1st-order airports having their driest January since 2009 (Lafayette), 2010 (Muncie) or 2016 (rest).

2022 started as a rain event was spreading northward through central Indiana. Widespread light to moderate rain fell through most of the **1st**, which tapered off to scattered light showers of rain and wet snow overnight, before ending early on the **2nd**. Two-day precipitation totals through early on the **2nd** of 0.50-**1.50"** were common, with greatest observations along southern and eastern counties: from **1.72"** at Owensburg (Greene Co.) to **1.30"** at Farmland 5 NNW. While the totals south of Interstate 70 do include rain that fell late on 12/31/2021, 75%

or more of these totals occurred within January. The wet snow prior to dawn on the 2nd brought scattered light coatings, to mainly north-central and northeastern zones, with as much as 0.3" reported at both the Danville 3 SW (Hendricks Co.) COOP station and north of Anderson (Madison Co.).

As a significant snow event crossed Kentucky on the 5th, the system's northern periphery brought snow showers during the midday and afternoon hours to southern counties, with a few reports of a thin coating, led by 0.4" at Shoals 8 S. Scattered flurries then crossed northern and central zones that evening as arctic air infiltrated the region, with a couple 0.1" reports in southern Hamilton County. The 8th saw a brief ice-to-rain event, where low-level warming was initially delayed with southerly winds arriving from an upstream Kentucky snowpack. A brief period of afternoon or late day freezing rain occurred along and west of the Interstate 69 corridor, with the greatest impacts across Knox and Vigo Counties. All rain prevailed by late evening. Rainfall totals by early on the 9th epitomized the typical north-south precipitation gradient, ranging from around 0.15" in far northwestern counties to generally 1.00-1.30" across south-central and southeastern zones, with 1.47" south of Harrodsburg (Lawrence Co.) being the greatest report.

Following the rains of December 2021, **minor flooding** was prevalent on central Indiana's main stem rivers through at least the first week of January. Flooding ended on the Wabash River from Lafayette to Riverton on the 5th to 8th, respectively, concluding 8-10 days above flood stage. The East Fork of the White River flooded at Seymour from the 1st to very early on the 5th, and then at Rivervale from the 5th to late on the 6th. The White River flooded into the first week of 2022 in Greene and northern Knox/Daviess Counties, with duration in flood ranging from just under 3 days at Newberry to nearly 8 days at Edwardsport. Lower points on the White began flooding from late on the 1st...and following the 8th-9th's rainfall...remained in flood at Petersburg and Hazleton through the 12th and 13th, respectively. The Wabash at Mount Carmel, Illinois, just below the confluence of the White River, also reached minor flood stage from early on the 3rd through the 8th. Non-main stem river points, Youngs Creek at Amity (Franklin Co.) and the Mississinewa River at Ridgeville, also flooded from the 1st through the morning of the 2nd, although moderate flood stage was not reached at Ridgeville.

A slowly developing winter storm curled around the southern edges of the region from late on the 14th through the 16th. When first plunging southward, it brought snow showers early on the 15th, with around 0.5" recorded across several counties west of Interstate 65, including the Lafayette, Terre Haute, Indianapolis and Bloomington areas; the greatest observation was 0.6" near Lake Lemon (Monroe County). Although the outer edge of the departing storm system's snowfall stayed just southeast of central Indiana on the 16th...a weak wave crossing the Mid-West on the 17th brought another round of pre-dawn snow showers to the southwest quadrant of the region; with reports as great as 1.0" in Knox and Daviess Counties.

The remainder of January 2022 found the flow of arctic short waves from the northwest bringing several periods of usually moisture-starved flurries and snow showers to mainly northern parts of the state. These light events did trend, however, towards greater and more expansive snowfall through the last two weeks of the month. The 19th saw isolated flurries; before snow showers on the 20th dropped a thin coating along the I-65 corridor to the north

and west of Indianapolis, with greatest observations including 0.7” at Klondike (Tippecanoe Co.) and 0.4” at Danville 3 SW. More organized snow showers then fell both early in the morning on the **23rd** ... and throughout the day on the **24th**, while including mixed precipitation types south of I-70. 2-day accumulations totaled 1.0-2.0” over north-central and northeast counties, with the greatest report, 2.5”, near Kokomo, while 0.8” was recorded as far south as Rushville (Rush Co.). An additional coating of snow came to most locations between snow showers during the day on the **27th**; and a rather steady light to moderate snow from pre-dawn to midday hours on Friday, the **28th**, where 2-day totals ranged from **2.8”** in Greenfield (Hancock Co.) and 2.7” in Carmel (Hamilton Co.) to even 1.7” near Mitchell (Lawrence Co.) and 1.1” at the Elnora COOP station (Daviness Co.).

As the month ended, two-thirds of the official winter season, and the majority of the snow season were completed; yet central Indiana’s total snowfall was well below normal. Indianapolis had totaled 1.7”, or only 11% of normal through January 31st. This was the first total-to-date to fall short of 5.3” since 1987-88, and actually the third lowest to-date of all 138 years on record. At IND, measurable snow had only fallen on five days, and had yet to exceed 0.5” for any single day. This would place the 2021-2022 season into at least the 5th-latest recorded first 1.0” for the Indianapolis Area, or the 96 percentile. (The latest first-inch on record was March 17th in 1973). While greater seasonal snowfall had been observed across other parts of the region -- about 5.0” near Lafayette and portions of Carroll and Anderson Counties, and even 4.7” in Carmel and 3.5” in Castleton (Marion Co.) – all of central Indiana was well below normal.

By the **29th** the upper Wabash River had some ice floes but was only frozen solid in places along its banks. Meanwhile the Tippecanoe River was ice free and Wildcat Creek was frozen over.

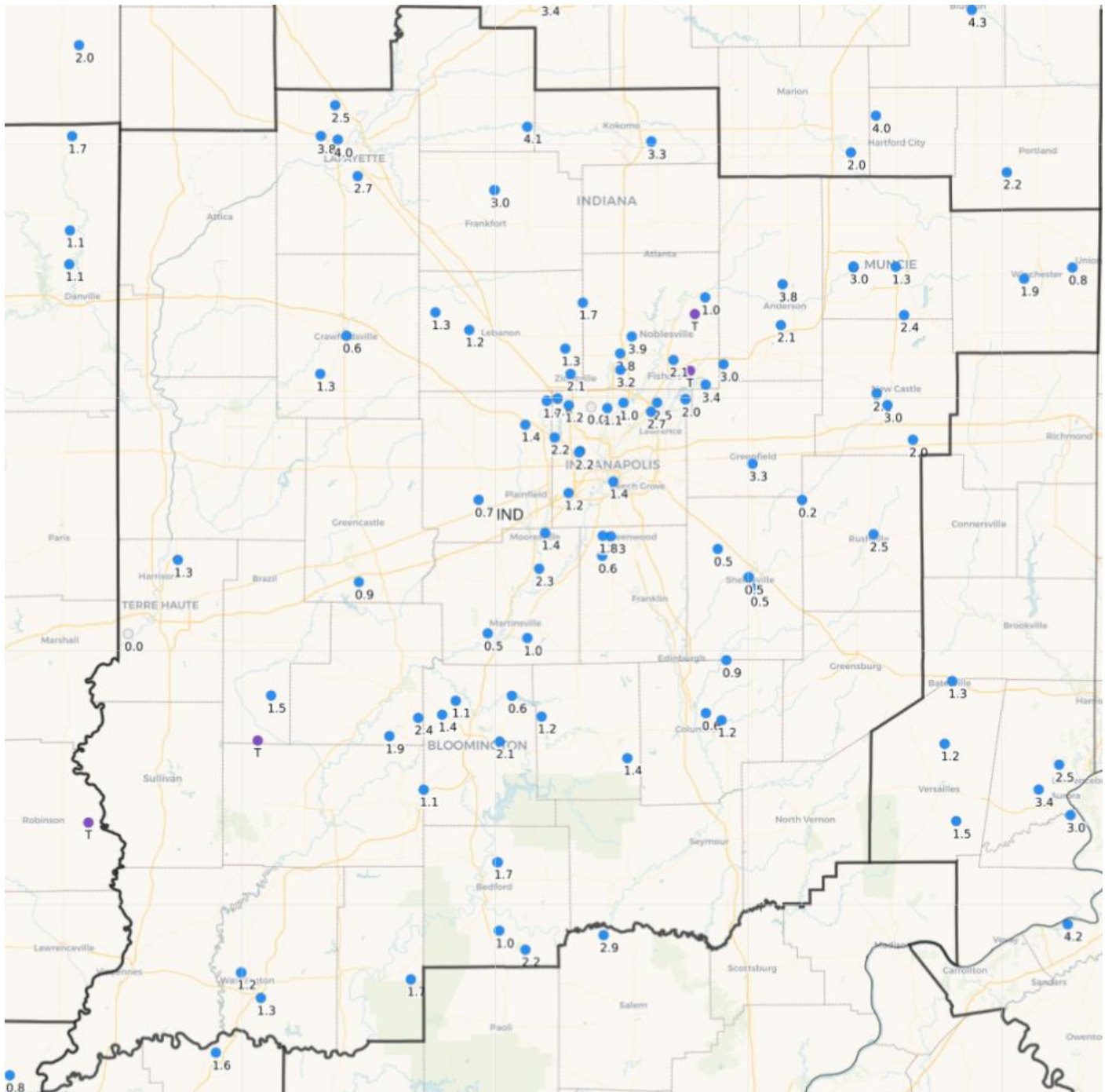
January 2022’s below normal precipitation was in contrast to December 2021’s ample rainfall, yet in accordance with the below normal pattern shown in most other Januarys since 2007. January 2022 also continued the more recent downward trend in January precipitation following the wet January 2020 and slightly below normal January 2021.

Site	January 2022 Precipitation	January 2022 Diff. from Normal	Wettest Day	Longest Dry Stretch
Indianapolis Intl AP	1.13	-1.99	0.43 on 1 st	5 days, 10 th -14 th
Lafayette	0.46	-1.73	0.28 on 1 st	5 days, 10 th -14 th
Muncie	0.97	-1.55	0.62 on 1 st	7 days, 13 th -19 th
Terre Haute	0.78	-1.82	0.40 on 1 st	5 days, 10 th -14 th
Bloomington	2.22	-1.16	1.22 on 1st	5 days, 10 th -14 th
Shelbyville	1.85	-1.20	0.89 on 1 st	5 days, 10 th -14 th
Indy - Eagle Creek (*)	0.60INC	M	0.59 on 1 st	6 days, 9 th -14 th

* – Precipitation data is missing for **Indianapolis – Eagle Creek** during 1/15 – 1/31

January 2022 tied for the **17th driest** for the Indianapolis Area since weather records began in 1871, placing it in the 89th percentile.

January 2022 Total Snowfall, Through the Morning of 2/1/2022 As Reported By Central Indiana CoCoRaHS Observers



For the period 700 AM EST 12/31/2021 -to- 700 AM EST 2/1/2022. Data is unofficial.

Snowfall totals were greatest (3.0-4.0") between both the Lafayette and Kokomo, and the Indianapolis and Muncie areas. Minimum values (< 0.5") were found south of Terre Haute and far southeastern counties. The entire region saw well below normal snowfall for the second consecutive month.

Severe Weather

January 2022's generally light precipitation events were devoid of severe weather – making it the fourth January in the last decade with this distinction (following 2015, 2016, and 2021).

For info on severe weather in other areas during January, visit the Storm Prediction Center "Severe Weather Event Summaries" website at [spc.noaa.gov/climo/online](https://www.spc.noaa.gov/climo/online)

Miscellaneous

The gradient from a strengthening surface cyclone crossing the Great Lakes on the 5th caused the month's greatest wind gust at all 1st-order airports, from mainly southerly to westerly directions, including 43 mph at Indianapolis, Muncie and Terre Haute ... and 47 mph at Lafayette. While no 1st-order site observed a daily peak gust in excess of 40 mph thereafter, 15 of the following 26 days did record gusts to 25-40 mph at Indianapolis, surrounding the consistent flow of arctic frontal passages.

Fog was somewhat common across central Indiana throughout the month, with frequency at 1st-order airports ranging from 8 days at Muncie to 15 days at Lafayette, while Indianapolis reported fog on 12 days. Fog occurred for essentially all sites on the 1st, 2nd, 4th, 8th, 9th, 13th, 14th, 28th, and 31st. The 1st found "heavy morning fog" at Kokomo 3 WSW; while ten COOP sites reported fog on the 14th, albeit not dense.

Dense fog was reported on the 1st at Muncie, the 2nd at Lafayette, and the 14th at Bloomington. No thunder was reported from any of the seven 1st-order airports.

Several additional insightful remarks from COOP observers helped described this cold start to 2022, including the arctic air's occasional ample sunshine. On the 11th Castleton 2 S noted "[month's] highest barometer 30.57", sunny", while Lebanon 6 W reported "milder, sunny, windy day; on the 16th and 30th Castleton 2 S remarked "lots of sunshine"; with notes then from both sites across the 25th and 26th regarding the continued cold, yet sunny conditions. Perrysville 4 WNW (Vermillion Co.) noted the sunny or mostly sunny skies for 16 of the 31 days.

February 2022 Outlook

The official outlook for February 2022 from the Climate Prediction Center indicates slightly greater chances of above normal temperatures for the region. The normal February temperature for Indianapolis is **32.5** degrees.

The outlook also indicates a greater chance of above normal precipitation for central Indiana. The normal February precipitation at Indianapolis is **2.43**".

*Data prepared by the Indianapolis Weather Forecast Office's State Climate Team
Questions should be referred to nws.indianapolis@noaa.gov*