

Central Indiana

November 2023 Climate Summary

34rd Mildest November on record at Indianapolis (Tied)

7th Driest November on record at Indianapolis

6th Least Snowiest November on record at Indianapolis (Tied)

Temperatures

November 2023 continued the fall's warm trend, with most sites nearing the ~2.0-degree above normal readings seen across central Indiana through September and October. Early November exhibited a zonal pattern with storm systems tracking north of the region, which favored generally south-southwesterly winds and resultant unseasonable warmth on the **4th-9th**. Canadian high pressure crossing the central U.S. through the mid-month promoted large diurnal temperature ranges, while overall seasonable readings trended to an above normal **third week** of November; this period of days ~5 degrees above normal (driven by an intensifying drought) was the difference from the month following otherwise near-normal temperatures. A strong late month pattern change to broad northwesterly flow brought much colder conditions to the central US, with below normal temperatures crossing the local region through the **25th-29th**.

Halloween's near-record cold burst lingered into November **1st** before robust south-southwesterly winds on the **2nd** returned seasonable highs in the 50s. Reported lows on the **1st**, mainly around 30F, were as low as **24F** at Bloomington and **26F** at the Rockville (Parke Co.) COOP station, while Indianapolis dropped to 28F. The **1st's** unseasonably cold afternoon only reached the 40s, with maximums as low as **42F** at the Frankfort Disposal (Clinton Co.) and **43F** at the Anderson 1 N (Madison Co.) COOP stations. Temperatures on the **2nd** rose 25-30 degrees at most locations, while Terre Haute and Bloomington rose a respective **+32** and **+31** degrees. An overall near-normal day on the **3rd** again featured a higher diurnal spread, including Bloomington rising 30 degrees to 62F.

Near-record warmth followed as winds gusting to around 40 mph on the **6th** and **8th** (see Miscellaneous section below) brought much warmer air off the Mexican Highlands to Indiana. Readings on the **6th** were boosted from around the low 40s to mainly the mid-70s, with diurnal spreads as great as **+39** and **+38** degrees at Muncie and Bloomington, respectively; with

readings as high as **78F** at the Shoals 8 S (Martin Co.) COOP station, while **77F** was reported at Rockville and several points south and west, with Indianapolis reaching 75F. Lighter winds on the **7th** allowed for highs closer to 70F, led by **76F** at several southern locations including the Spencer (Owen Co.) and Oolitic Purdue Ex Farm (Lawrence Co.) COOP stations, meanwhile Indianapolis peaked at 71F. The **8th** was the month's distinctively warmest day with the region rising to around 80F, on several locations' increasing 30 degrees or more, including a **+32** boost at both Lafayette and Eagle Creek Airpark; highest observations were **83F** at Shoals 8 S and **82F** at both the Seymour 1 WSW (Jackson Co.) and Washington 1 W (Daviess Co.) COOP stations, while Indianapolis' 78F mark was only one degree shy of the daily record set in 2020; Bloomington and Terre Haute each observed a daily average temperature of 68F – **22 degrees above normal** at both airports. By the numbers, the **9th**'s maximums were also unseasonably high across the region's southeastern half, but these low-70s occurred just after midnight as a cold frontal zone brought much cooler air to the region, displaying a **-36** degree change in under 32 hours at Terre Haute, to a daily low of 34F on the morning of the **10th**.

Overall seasonable conditions prevailed during the **10th-14th**, albeit with a cold morning on the **11th**, more impressive diurnal spreads on both the **13th** and **14th**, and a resultant milder afternoon on the **13th**. Lows on the **11th** fell to about 10 degrees below normal, with **22F** recorded at Rockville as well as the Farmland 5 NNW (Randolph Co.) and Perrysville 4 WNW (Vermillion Co.) COOP stations, meanwhile Indianapolis fell to 32F. Temperatures on the **13th** rose 30-35 degrees over most locales, led by a **+38** differential at Terre Haute, with a +29 degree rise at Indianapolis; afternoon highs in mainly the mid-60s were led by **69F** at the Vincennes 5 NE (Knox Co.) COOP station. An even greater daily temperature change was observed on the **14th**, led by **+41 degrees** at Terre Haute, with +39 at Muncie, and +29 again at Indianapolis.

Above normal temperatures through November's third week were brought by a continuation of large diurnal ranges. The **15th**'s spreads were the most impressive of the month, with a majority of 1st-order sites rising at least +40 degrees, and ranging from **+41** at Terre Haute to +32 at Indianapolis, while both airports rose into the mid- to upper 60s; meanwhile afternoon highs were led by **72F** at Shoals 8 S. This pattern continued into the **16th** with Bloomington boosted **+36** degrees while Shoals 8 S took the lead again at **71F**, along with Vincennes 5 NE and Washington 1 W. The **20th** and **21st** switched to modest ranges in readings amid light rainfall, with milder mornings leading the trend: minimums were as high as 46F in parts of Lawrence and Monroe Counties on the **20th**, and up to 43F on the **21st** across Daviess County.

Late November's pattern turned more active as a deepening upper trough over interior North America shifted much colder air into the Midwest. Cold mornings were the rule during the **24th-29th** with widespread teens on the final two days of this period, while steadily decreasing daily highs bottomed-out with a sub-freezing maximum on the **28th**. The **27th** calendar day minimums were as low as **20F** in the late evening at both Lafayette and the Castleton 2 S (Marion Co.) COOP station. The morning of the **28th** brought **10F** to Rockville, while Indianapolis dropped to 17F; subsequent highs made only the mid- to upper 20s, with readings as low as **24F** at both Kokomo 3 WSW and Rushville; Indianapolis' high of **25F** was actually the 3rd-lowest maximum of the year. The **29th** brought one more unseasonably cold morning with lows in mainly the upper teens, although **12F** and **14F** were observed at Rockville and North Vernon 2

ESE, respectively, while Indianapolis reported 19F; moderating southwesterly winds brought one more day with greater diurnal ranges that included +33 degrees at Bloomington, with afternoon highs rebounding to the low 50s at Terre Haute and points along the lower Wabash Valley. November ended on overall above normal temperatures when the 30th brought mid to upper 50s across the region, 60F to a few spots including Columbus, and 58F at Indianapolis.

Site	November 2023 Avg Temp	November 2023 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	45.2	+1.9	78 on 8 th	17 on 28 th
Lafayette	42.6	+1.3	77 on 8 th	17 on 28 th
Muncie	45.2	+1.3	80 on 8 th	18 on 28 th
Terre Haute	45.1	+2.0	80 on 8 th	16 on 28 th
Bloomington	45.5	+1.8	80 on 8 th	16 on 28 th & 29 th
Shelbyville	46.3	+2.3	82 on 8 th	17 on 28 th
Eagle Creek Airpark	44.7	+1.3	78 on 8 th	18 on 28 th

At Indianapolis, November 2023's daily average temperatures were above normal on 17 days, below normal on 9 days and at normal on 4 days. November 2023 tied for the Indianapolis Area's 34th warmest November since weather records began in 1871, placing it in the 78th percentile.

Precipitation

November 2023's well below normal precipitation brought a distinctive end to Indianapolis' 7th-driest (tied) autumn on record. Rainfall totals mainly under 1.00" allowed moderate drought (D1) to become the region's prevailing intensity, with Indianapolis continuing to have the driest rolling-12 month period since 2009-10. November normals are generally 2.90-3.70", but with the typical north to south gradient skewed higher to the southeast per Terre Haute normally collecting 0.40" less than the Indianapolis Area (3.05" vs. 3.45"). November 2023 recorded about 2.50" less than normal, or a mere ~25% of typical expectations.

The overall dry pattern seen across central Indiana since mid-August 2023 had a partial reprieve through October amid several moderate rainfalls, and a well-received 1.00-1.50" mid-month event across northern counties. October's final week was damp, including 5-day precipitation totals of 1.00-2.00" over the whole region. The October 31st U.S. Drought Monitor update (released November 2nd) showed a noticeable improvement as the once prominent Moderate Drought (D1) had receded to south of a Rockville-Mooresville-Shelbyville line, with no drought intensity over Clinton, Howard, or Tipton Counties, and Abnormally Dry (D0) intensity over the zones in between. However, a regime change as November began, reinstated prolonged dryness.

The first half of November was exceedingly dry, outside of a few hours of scattered light rain on the overnight of the 8th that focused along Interstate 70 from Hendricks to Henry Counties, with as much as 0.41" reported in New Palestine (Hancock Co.). The month's first 16 days were otherwise essentially devoid of rain, with the only other scattered sprinkles and/or light rain on the 4th. Weekly Drought Monitor updates maintained the status quo of **D1** south/west of Shelbyville, with the 14th's update showing a small northward expansion of **D0** through all of Warren County and nearly all of Clinton and Carroll Counties.

The first of three latter-month organized precipitation events crossed the region on the 17th, with rain sliding eastward during AM hours before tapering off during the afternoon. Briefly moderate rainfall rates around dawn over Shelby and Rush Counties led to a 0.87" report near Waldron (Shelby Co.), with the tailing maximum axis extending to a 0.84" observation near Tulip (Greene Co.), and isolated 0.50"+ reports from the western and northern portions of the Indianapolis Metro, while most of the upper Wabash Valley did not measure any rain. The second event was drawn out from midday on the 20th to midday on the 21st, yet could only muster 0.20-0.50" for most locations; nevertheless 0.63" was recorded at the Elnora COOP station, with 0.57" reported in Plainville (both in Daviess Co.). The 21st's Drought Monitor update again exhibited mainly a status quo mixture of **D1** south/**D0** central-north with a subtle northward advancement of **D1** into the US-36 corridor from around Rockville to southern Marion County, and **D0** northward past Tipton and into western Howard County.

The arrival of much colder air during November's last week was marked by a final light precipitation event on the 26th whose rain mixed with our changed to wet snow during the morning along the Upper Wabash Valley, while occasional flurries were reported during the day at both the Lebanon 6 W (Boone Co.) and Tipton 5 SW (Tipton Co.) COOP sites. Snow lasting through the early afternoon brought an estimated 1.2" at Perrysville 4 WNW as snow melted as it fell, with other reports over an inch in parts of Fountain County, while up to 0.4" was reported northwest of Lafayette (Tippecanoe Co.), and 0.1" was measured as far southeast as far northeastern Hendricks County. The light rain ended as a few flakes or a flurry in the evening over several central counties. Rather uniform precipitation totals ranged within 0.15-0.25" for most locations.. Scattered flurries graced many northern and central counties through AM hours on the 28th, with no measureable snow reported. The 28th Drought Monitor showed more northward deterioration, with all north-central counties (as well as almost all of northern Indiana) enveloped with **D0**, while **D1** expanded over the rest of the I-70 corridor, Indianapolis Metro, and all northwestern areas west of I-65.

November's well below normal precipitation was ~2-3" from seasonable expectations, with extremes ranging from 0.30" in western portions of Tipton County to several small areas nearing 1.35" in Greene, Monroe, Henry and Rush Counties. Most locations picked up ~30-60% of their low monthly total from the light to moderate rainfall during the 17th's AM hours. Ignoring calendar day boundaries, the greatest 24 hours of rainfall at 1st-order sites ranged from 0.29" at Lafayette (during the 20th-21st) to 0.65 at Bloomington (17th), with Indianapolis following with only 0.31" (17th). Measurable rain fell on only 4-6 days (~half of normal), while only 2-4 days produced 0.10"+ (well shy of the ~6 day normal). The first half of November was generally devoid of organized rainfall, with half of central Indiana not measuring any precipitation through the 16th, with not even a trace over portions of several west-central and

southern counties. About half of the region's COOP stations recorded their 2nd-driest or driest November: Columbus' **0.52"** was 2nd only to 1917, Williams 3 SW's **0.75"** was 2nd only to 1949, Tipton 5 SW's **0.33"** was the driest in the site's 45-year record; with several other sites also exhibiting a greater-than-40-year-return period - West Lafayette 6 NW's **0.48"**, West Lafayette Sewage's **0.45"**, and Perrysville 4 WNW's **0.42"**, the latter two being all-time driest Novembers; several other noteworthy monthly totals included Frankfort Disposal's **0.52"** (their driest since 1976), Oolitic Purdue Ex Farm's **0.61"** (their driest in at least 105 years), Vincennes 4 E's **0.74"** (the 3rd driest in the station's 112-year record), Lafayette 8 S' 2nd-driest at **0.49"**, and Spencer's **0.93"**, which was still the 2nd-driest November in the 77-year record despite the greater total. Indianapolis' precipitation over the last 12 months (now December 2022–November 2023) dropped slightly to 35.75", which is a 7.88" deficit (or only 82% of normal), and the lowest for this 12-month period since 2009-10. The 2023 year-to-date total at Indianapolis (following a very wet March and active summer) rose to **33.12"** (**-7.59"** from normal). Drought Monitor level trends showed drought intensifying by one of more categories: from **D1** across most southern counties and **D0** elsewhere excepting north-central zones ... to **D1** prevailing over the central and southern ~80% of the region, with **D0** across most northern counties. No river/creek flooding was observed during November. Indianapolis' trace of snowfall tied 31 other Novembers, and placing it in the 4th-26th percentile of snowfall for the year's 11th month, yet only 0.5" shy of the median average for November.

Site	Nov 2023 Precipitation	Nov 2023 Dep from Nml	Wettest Day	Longest Dry Stretch
Indianapolis Intl	0.93	-2.52	0.31 on 17 th	6 days, 10 th -15 th
Lafayette	0.48	-2.39	0.20 on 21 st	8 days, 9 th -16 th
Muncie	1.02	-2.21	0.59 on 17 th	8 days, 9 th -16 th
Terre Haute	0.66	-2.39	0.18 on 17 th , 20 th , 26 th	9 days, 7 th -15 th
Bloomington	1.05	-2.68	0.65 on 17 th	8 days, 9 th -16 th
Shelbyville	0.90	-2.71	0.47 on 17 th	8 days, 1 st -8 th
Eagle Creek Arpk	0.89	-2.36	0.42 on 17 th	7 days, 10 th -16 th

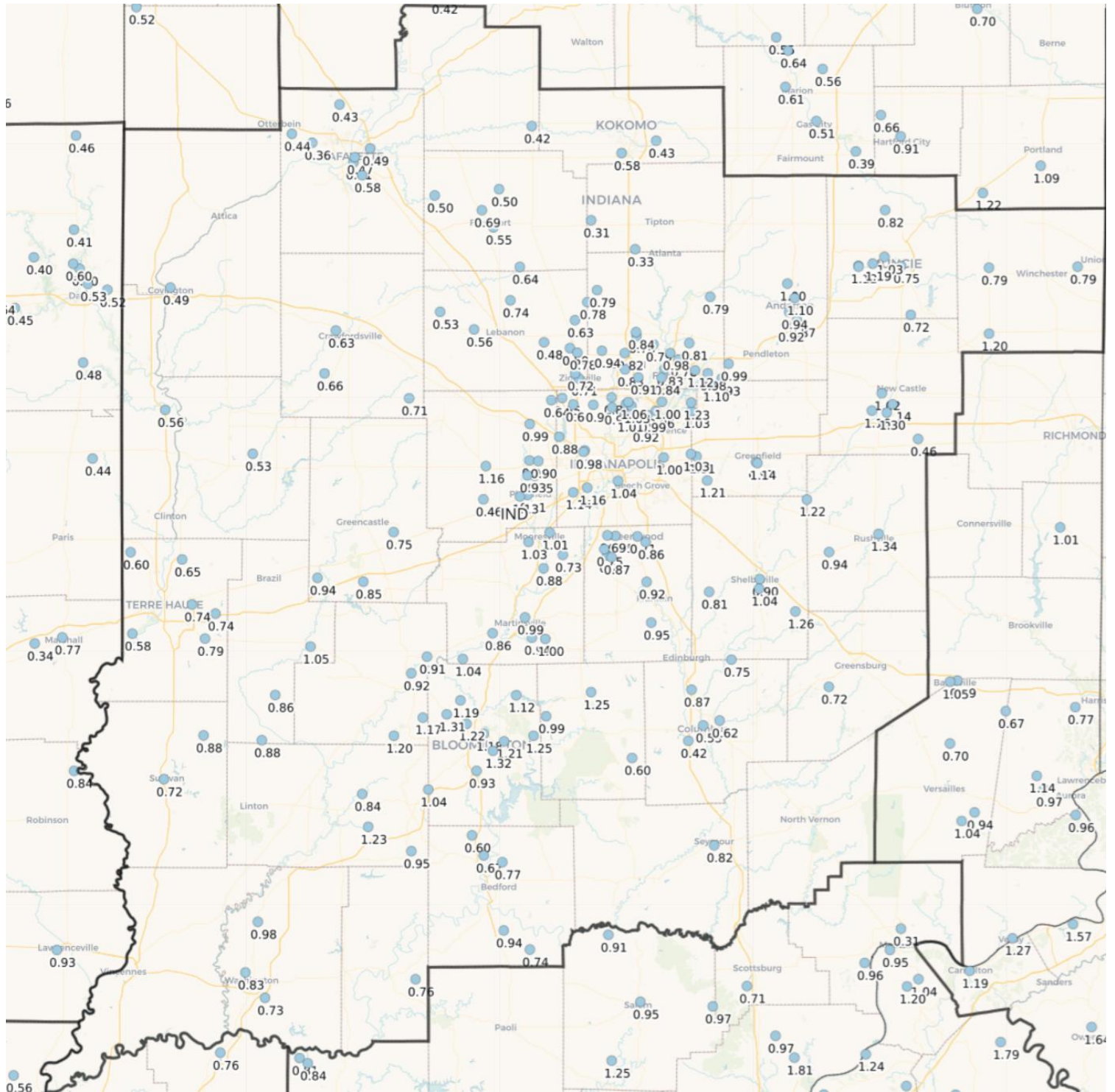
November 2023 was the **7th driest** November in the Indianapolis Area since weather records began in 1871, placing it in the **5th percentile** for precipitation of all recorded Novembers. This continued the very dry trend exhibited in all Novembers since 2020, as well as the below normal precipitation observed since August 2023.

Severe Weather

No severe weather nor flooding occurred within central Indiana during November 2023.

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

November 2023 Total Precipitation, From 11/1/2023 Through Late Day 11/30/2023 As Reported by Central Indiana CoCoRaHS Observers



For the period 700 AM EST 11/1/2023 -to- 300 PM EST 11/30/2023, data is unofficial**

Well below normal monthly totals displayed a modest range of extremes from a paltry **0.31"** in Tipton County to just over **1.30"** in portions of Greene, Monroe, Henry and Rush Counties.

Miscellaneous – Winds, Fog, Thunder & More

No wind gusts over 45 mph were recorded at any of the seven 1st-order airports in November. The 8th was the overall windiest day with essentially all sites gusting to 35 mph or greater, and 41 mph observed at both Muncie and Shelbyville. Robust breezes were also prevalent on the 6th (when Bloomington hit 45 mph and Indianapolis reached 40 mph) and the 26th (when Eagle Creek Airpark recorded 38 mph). Less-breezy days where peak gusts still averaged 30 mph or greater favored the late month: 3rd, 10th, 21st, 27th, and 30th. Quiescence was occasionally observed, when gusts peaking at 20 mph or less at all sites on the 5th, 15th, 19th, and 25th, with peak gusts averaging only 11-12 mph on the 5th and 19th.

Fog was infrequent for late autumn, yet at times pervasive; frequency at 1st-order sites ranged from 5 days at Shelbyville to 11 days at Lafayette, with 7 days at three other airports. Fog was recorded at all sites on the 5th, 17th and 21st; and at most airports on the 7th, 20th, and 26th. Fog was reported on 5 of 6 days at Lafayette (17th-22nd) and on 4 of 5 days at Marion County airports (5th-9th). Intensifying drought conditions promoted less dense fog, with reports limited to Bloomington and Terre Haute on both the 5th and 7th, and also on the 5th at Muncie and Lafayette, as well as the 18th at Lafayette.

No thunder was reported at any of the seven 1st-order airports throughout November.

Humidity extremes were limited to the first half of the month, with moderate humidity on the 8th bisecting very low daily minimum relative humidity values on both the 3rd and 13th-15th. Relative humidity on the 3rd dropped to 22% at Shelbyville, with 25% observed at Marion County airports. Dewpoints rose to 60F for 4-8 hours for most locations through PM hours on the 8th into very early on the 9th, with dewpoints as high as 63F at Terre Haute and Marion County airports. More extended dryness followed on the 13th-15th, with Bloomington's relative humidity dropping to 17-18% each day, with all other 1st-order sites recording 20-25% on both the 13th and 14th, Indianapolis' monthly minimum was 21% on the 13th.

December 2023 Outlook

The official outlook for December 2023 from the Climate Prediction Center indicates greater chances of above normal temperatures across central Indiana. The normal December temperature at Indianapolis is **33.3** degrees.

The outlook also indicates equal chances of above, below and near normal precipitation for the region. The normal December precipitation at Indianapolis is **2.92"** with **6.4"** of snowfall.

Data prepared by the Indianapolis Weather Forecast Office's State Climate Team

Questions should be referred to nws.indianapolis@noaa.gov