

Central Indiana November 2021 Climate Summary

43rd Coolest on record at Indianapolis

13th Driest on record at Indianapolis

Temperatures

November 2021 was rather cool, averaging about 1.5 to 3 degrees below normal across central Indiana, which included a chilly first week and several short (1-3 day) periods of unseasonably cold readings scattered throughout the rest of the month. Meanwhile, mild periods were infrequent/modest, past several days during the month's second week and the 17th. A review of Novembers over the past ten years reveals a broad range of monthly average temperatures at Indianapolis Int'l Airport, ranging from 35.9°F (2014) to 48.1°F (2016), with an skew towards warmer values. November 2021 fell at the middle of this set as the 5th coolest. It was the coolest November since 2019 when a 2-4" Veteran's Day snowfall was immediately followed by a record-cold arctic blast that set all-time records for earliest maximum temperature < 25F and earliest minimum temperature < 10F (both on 11/12/2019). November 2021 was a less-extreme counterpart; although it was still the coolest month relative to normal in half a year – as only May 2021 and the anomalously cold February 2021 have had greater temperature departures below normal this year. (Although at Indianapolis November 2021 was technically the fourth month below normal for the year when also considering a marginally-cool July.)

November 8th brought the highest temperatures for essentially all of central Indiana as sites peaked near 70F, with both the Washington 1 W (Daviess Co.) COOP station and Shelbyville Municipal Airport reaching **72F**. Coldest mornings were fairly evenly distributed across the upper teens to lower 20s reported on **23rd**, **26th**, and **29th**; with the respective lowest being 16F at New Castle 3 SW (Henry Co.) on the **23rd** ... **13F** at Rockville (Parke Co.) on the **26th** ... and 18F at both Crawfordsville 6 SE (Montgomery Co.) and North Vernon 2 ESE (Jennings Co.) on the **29th**. The highest minimum temperatures were reported during the period from late day on the 16th to late day on the 17th when the mercury only dropped to **57F** at Washington 1 W and to 53F at Elnora (Daviess Co.). Conversely, the lowest maximum temperatures followed the cold morning lows on Black Friday (**26th**), as Frankfort Disposal (Clinton Co.) and Lafayette's Purdue University

Airport only reached 30F, while over a dozen other sites across northern and west-central counties failed to break 32F, including Indianapolis Int'l and Terre Haute.

Excepting a few of the typically-colder locations, central Indiana did not record a first freeze through October. However, a large mass of Canadian high pressure built into the region over November's first few days. All northern sites and many spots along the I-70 corridor reported their first freeze late on the 1st or on the morning of the 2nd ... all 1st-order airports outside of Marion County had hit 32F or lower by the end of the 2nd ... and all corners of the region had seen a freeze by the morning of the 3rd. The Elora COOP remarked the 3rd had a "killing frost" as the first freeze at this southern locale hit 27F. Cold mornings continued amid the broad surface high, with five consecutive mornings in the 20s (3rd-7th) seen outside of the Marion County heat island, including a hard freeze observed across a majority of the region on each morning through the 6th. The 1st-6th was the first time Indianapolis had recorded six consecutive days with below normal readings since early August.

November 3rd tied for 8th-latest first freeze for the Indianapolis Area, placing it at the 95th percentile of all years since 1871. Two first freezes occurred later since 2000: 11/6/2007 and the all-time latest on 11/12/2016. Lafayette's first freeze this year, on the 1st, was the airport's 3rd-latest in 53 years of data. When considering the longer observation periods for the Bloomington and Terre Haute areas (since 1895 and 1896, respectively), their first freezes on the 2nd ranked as 81st and 83rd percent latest, respectively.

November 2021's below normal temperatures were in contrast to the very warm conditions from both October 2021 and November 2020. However, November 2021 followed the multi-decadal trend of November showing the overall smallest warming trend (+0.2°F) of any month across central Indiana's seven 1st-order airports when comparing normal temperatures from 1981-2010 and 1991-2020. (Although, specifically, November has shown local cooling trends at Indianapolis Int'l (-0.3°F), Terre Haute (-0.2°F), and Bloomington (-0.1°F)).

Site	November 2021 Average Temp	November 2021 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	40.5	-2.8	69 on 8 th	20 on 23 rd
Lafayette (*)	39.3	-2.0	68 on 8 th	18 on 23 rd
Muncie	42.4	-1.5	70 on 8 th	23 on 23 rd
Terre Haute	40.7	-2.4	71 on 8 th	20 on 23 rd , 29 th
Bloomington (*)	41.1	-2.6	71 on 8 th	20 on 23 rd , 29 th
Shelbyville	42.1	-1.9	72 on 8 th	22 on 23 rd , 29 th
Indianapolis Eagle Creek	41.2	-2.2	69 on 8 th	21 on 23 rd

At Indianapolis, November 2021's daily average temperatures were above normal on 11 days and below normal on 19 days. It was the 43rd coolest November for the Indianapolis Area since weather records began in 1871, placing it in the 71st percentile.

Precipitation

Following the release of the new 30-year climatological normals (1991-2020) earlier this year, November is now typically the wettest month across central Indiana from August through March; even though several of the months in this period normally see only slightly lower amounts. Normally around 2.90-3.70" of precipitation falls across the region in November. However, November 2021's totals were well short of these values, including only **1.22"** at Indianapolis International Airport, a mere **35% of normal**. This was the driest November at Indianapolis in 12 years -- since only 1.16" fell in 2009; although it was the driest since 2012 for several other locations. Indianapolis' total was the least for any month since the record dry September 2020, although many northern counties reported less precipitation than November 2021 in February 2021.

Widespread minor river flooding on the Wabash River carried over from late October. A second crest occurred at Covington on the **1st** and at Riverton on the **3rd**. Flooding ended at Lafayette on the **3rd**, Covington on the **4th**, Montezuma and Terre Haute on the **5th**, and finally at Riverton on the **7th**. When considering both months, the flooding's duration ranged from 9 days at Lafayette to nearly 12 days at Riverton.

Essentially all of central Indiana was rainless through the **10th**, with only occasional light events occurring through the remainder of the month. No daily reports surpassed 1.00". The greatest 1-day observation was **0.88"** through dawn on the **18th** east of Shoals (Martin Co.), which lead scattered reports that morning of generally 0.50-0.75" south of I-70. This was the only November on record where none of the 1st-order airports reported greater than 0.40" on any day. Only November 1954 came close to resembling this lack of organized rainfall: Indianapolis, Lafayette, Terre Haute and Shelbyville all failed to collect more than 0.37" on any single day, while Bloomington's rainiest day totaled 0.50".

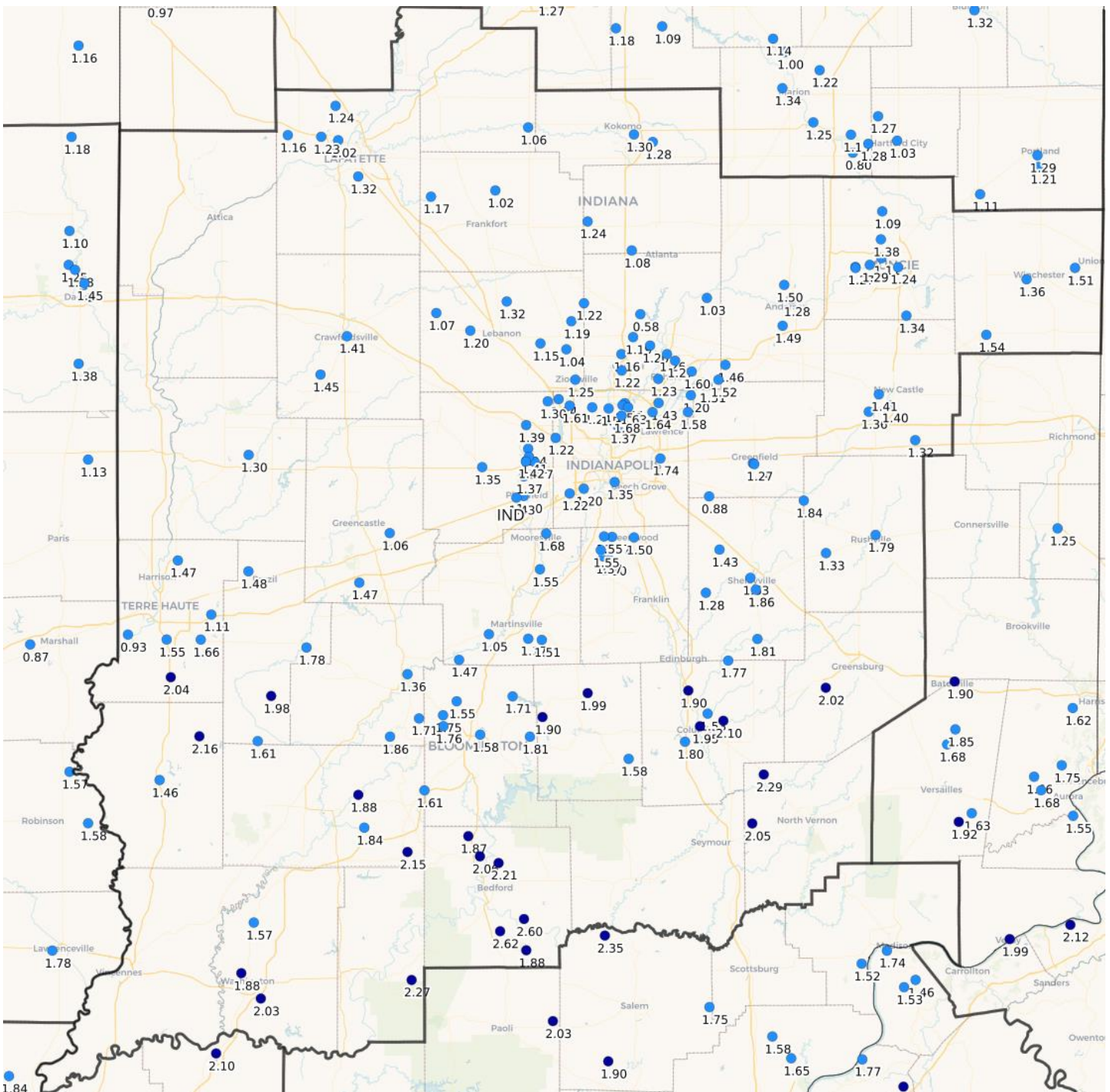
The season's first frozen precipitation fell over most counties between the **12th** and the **15th**, courtesy of strong back-to-back upper troughs that plunged from the upper Mid-West into the region. Flurries brought a trace of snow on the evening of the **12th** through early on the **13th**. Most notable were the **14th**'s ~2 hours of morning snow showers, that briefly reached moderate (at Lafayette and Indianapolis - Eagle Creek) to heavy (at Muncie) intensity, before tapering off to a mix or light rain by midday as the lower atmosphere warmed. Accumulations were mainly on elevated or grassy surfaces, with generally 0.5"+ reported along and north of the I-74 corridor and several reports near 1.0" in northeast counties. Greatest reports were 1.2" in North Anderson (Madison Co.), and 1.1" in both Carmel (Hamilton Co.) and the Tipton 5 SW COOP site (Tipton Co.). The **15th** then saw afternoon flurries across most zones, with a dusting thick enough to record 0.1" in Franklin (Johnson Co.).

November 2021's well below normal precipitation was a strong reversal from October 2021's wet pattern. Nonetheless, Indianapolis' year-to-date total rose to **45.52"**, as the corresponding surplus decreased to **4.81"** above normal. November 2021's lack of precipitation was a drop from November 2020's near normal totals, when Indianapolis recorded 3.65".

Site	November 2021 Precipitation	November 2021 Diff. from Normal	Wettest Day	Longest Dry Stretch
Indianapolis Intl AP	1.22	-2.23	0.31 on 21 st	10 days, 1 st -10 th
Lafayette	1.26	-1.61	0.34 on 17 th	10 days, 1 st -10 th
Muncie	0.54	-2.69	0.21 on 17 th	10 days, 1 st -10 th
Terre Haute (*)	1.59	-1.46	0.40 on 21 st	10 days, 1 st -10 th
Bloomington	1.62	-2.11	0.37 on 21 st	10 days, 1 st -10 th
Shelbyville (*)	1.51	-2.10	0.39 on 17 th	10 days, 1 st -10 th
Indy – Eagle Creek	1.34	-1.91	0.33, 21 st , 25 th	10 days, 1 st -10 th

November 2021 was the **13th driest** for the Indianapolis Area since weather records began in 1871, placing it in the 91st percentile.

November 2021 Total Precipitation, Through the Morning of 12/1 As Reported By Central Indiana CoCoRaHS Observers



For the period 700 AM EDT 11/1/2021 -to- 700 AM EDT 12/1/2021. Data is unofficial.

Rainfall totals were greatest (1.50"+) south of I-70, with just over **2.50"** in Lawrence County. Minimum values (1.00-1.25") were found across north-central counties. The entire region was below normal.

Severe Weather

November 2021's light precipitation events were devoid of severe weather – making it the fourth November in the last decade with this distinction (following 2012, 2015 and 2018).

For info on severe weather in other areas during October, visit the Storm Prediction Center "Severe Weather Event Summaries" website at spc.noaa.gov/climo/online

Miscellaneous

The month's maximum wind gust at the Indianapolis International Airport was 45 mph (from the west-southwest) on the **12th**. Other notable 1st-order airport peak wind gusts included 46 mph from the southwest at Muncie on the **11th**, and 44 mph from the west-northwest at Terre Haute on the **14th**. The remaining four sites saw peak gusts of 38 to 40 mph on the **11th**, **12th**, or **18th**.

Fog was common across central Indiana, especially over the first three weeks of the month, with overall frequency ranging from 6 days at Muncie to 18 days at Lafayette. Fog was observed on 9 days at Indianapolis Int'l Airport, 10 days at Bloomington, and 11 days at Terre Haute. All seven 1st-order airports reported fog on the **10th**, **14th**, **17th**, **21st** and **25th**. Dense fog was not observed at Indianapolis during the month, although most sites reported dense fog on the **10th**, as did Muncie on the **14th**. Several COOP sites also reported dense fog on the **10th**, including Lebanon 6 W (Frankfort Co.) and Perrysville 4 WNW (Vermillion Co.).

Thunder was not reported at any of the seven 1st-order airports, nor any COOP sites.

December 2021 Outlook

The official outlook for December 2021 from the Climate Prediction Center indicates a greater chance of above normal temperatures for the region. The normal December temperature for Indianapolis is **33.3** degrees.

The outlook also indicates an equal chance of above, below or near normal precipitation for central Indiana. The normal December precipitation at Indianapolis is **2.92"**.

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