

Central Indiana October 2022 Climate Summary

58th Coolest October on record at Indianapolis

36th Driest October on record at Indianapolis

Temperatures

October 2022's temperatures were overall slightly below normal, although this average included ~20 days that were at least 5 degrees above or below seasonal levels. Most of the month was cool to anomalously chilly: October started with several days of northeasterly winds from Hurricane Ian's remnants lingering over the Mid-Atlantic, the second week was led by a northwesterly flow around a deep trough over southeastern Canada, and the middle of the month found a strong upper-level trough spinning around the Great Lakes while its belly, positioned over Indiana, brought the month's coldest weather, as well as consistently breezy conditions and the season's first light snow. A quick pattern change then brought above normal temperatures for 8 of the month's final 11 days, as southerly winds across Indiana were promoted by weak troughs lifting from the southern Plains as well as surface high pressure positioned near the Atlantic coast.

Following a persistently chilly end to September, October's **first six** days were near to slightly below normal, with highs in the 70s and lows in or near the 40s. The **4th** was the coldest morning, with most sites falling into the 30s, and the autumn's first freeze recorded at several of the typically-colder locations: **29F** at the Davis Purdue AG Center at Farmland 5 NNW (Randolph Co.), **30F** at both the Crawfordsville 6 SE (Montgomery Co.) and Tipton 5 SW (Tipton Co.) COOP stations, **31F** at the New Castle 3 SW (Henry Co.) COOP station, and **32F** at both Muncie and the Beck Agricultural Center at West Lafayette 6 NW (Tippecanoe Co.); meanwhile Indianapolis was the region's warm spot, falling only to 41F.

A mild morning with lows near 50F led slightly above normal readings on the 6th, before a cooler blast was felt during the 7th-9th. The morning of the 8th was the coldest yet for the season, with a first freeze reported to the rest of the region north of Interstate 70 outside of the Indianapolis Metro area: 30F was a common observation from Lafayette to Terre Haute to Rockville (Parke Co.), while readings were as low as 27F at Farmland 5 NNW and 28F at New Castle 3 SW and West Lafayette 6 NW; a first freeze was also recorded at isolated southern locations – 32F at Bloomington and 30F at the North Vernon 2 ESE (Jennings Co.) COOP station; Indianapolis officially dropped to 35F. The 8th's daytime was the coolest of this second-week mini-blast, with highs generally in the upper 50s to around 60F, and maximums as low as 54F at the Carmel 3 E (Hamilton Co.) COOP station and 55F at the Castleton 2 S (Marion Co.) COOP station. The 9th featured another cold morning, with reports of 27F at New Castle 3 SW, 28F at the Perrysville 4 WNW COOP station (Vermillion Co.), and 29F at Terre Haute; while a couple first freezes were recorded over south-central zones with 30F at the Spencer COOP site (Owen Co.) and 31F at the Oolitic Purdue Farm (Lawrence Co.); Indianapolis dropped to 34F.

The 10th-16th was on the whole near normal, between milder weather with highs mainly in the 70s through the 12th, and then more autumnal conditions over the 13th-16th, when most locations reported several more chilly mornings in the 30s to around 40F. The 14th's minimum temperatures were as low as 29F at Farmland 5 NNW, with several 30F observations at the typically-colder locations, including Terre Haute; Indianapolis dropped to 36F. Another chilly morning on the 15th included lows of 30F at Perrysville 4 WNW and 34F at Lafayette. The 15th also brought the coolest daytime of this period, with maximum temps around 60F, and as low as 54F at the Kokomo 3 WSW (Howard Co.) COOP station, while 55F reports were common across Tippecanoe County to the Frankfort Disposal (Clinton Co.) COOP station.

The 17th-20th then brought anomalous to near-record setting cold as Indiana sat within the belly of strong cut-off trough as it spun reinforcing shots of Canadian air into the Midwest. The 17th and 18th featured lows in the 30s yet again, although more noteworthy were very low high temperatures mainly in the 40s; the 17th only reached 43F at Frankfort Disposal, West Lafayette 6 NW and Carmel 3 E, while Lafayette managed 44F; the 18th peaked at a mere 41F at both Farmland 5 NNW and New Castle 3 SW, while a maximum of 42F was observed at Kokomo 3 WSW, Rushville, Rockville (the station's earliest max temp this low since 1909!), and Muncie (their earliest day so cold since 1965); Indianapolis' high of 45F was the earliest high temp this low since 2009 (10/16). The coldest mornings of the month then followed: the 19th brought a first freeze to Indianapolis (32F), as well as the Elnora (29F) and the Washington 1 W and Vincennes 5 NE COOP stations (both 31F), while readings were as low as 26F in Rockville; the 20th finally saw a widespread hard freeze, with Rockville and Spencer both dropping to 24F, while a 26F reading was found from Tipton 5 SW and the Jamestown 2 E (Boone Co.) COOP station, to as far south as Shoals 8 S (Martin Co.) and North Vernon 2 ESE, while Indianapolis recorded 28F. The lows at Rockville, Spencer and Indianapolis were all the earliest such readings in 30 years – since 10/19/1992.

As is often the case following very strong autumnal high pressure systems – a sharp pattern change occurred at the end of the third week as the flow around the broad, strong high pressure changed from northwesterly to southerly, facilitating a 1-day transformation from well below normal to mild readings. Temperatures rebounded by 30-35 degrees at most sites on

the **20th**, with afternoon highs peaking in the upper 50s to mid-60s; the greatest diurnal spread was observed at Spencer which rose +37 degrees (from 24F to 61F), while Lafayette and Terre Haute both warmed by +36 degrees. The strong moderation continued, as warm winds boosted highs into the 70s on the **21st**, before morning lows then returned to seasonable marks on the **22nd**. The **22nd-25th** ran 10-15 degrees above normal across the region, with a few locations pushing 20 degrees above seasonable levels on the **23rd**. Afternoon maximums on the **22nd** hit **80F** along the Wabash Valley and as far east as Shakamak State Park (Sullivan Co.) and Tipton 5 SW; several sites then rose into the low 80s on the **23rd**, with **82F** at Tipton 5 SW, and **81F** at Perrysville 4 WNW, Vincennes 5 NE and Washington 1 W; Indianapolis peaked at 78F and 79F, respectively. The highest daily minimum temperatures during this warmer regime occurred on the **23rd** and **25th**, with mid-50s to low 60s common both mornings.

October's final six days were overall near normal, between slightly below normal readings on the **26th-27th** and milder temperatures thereafter amid a return to rainier conditions and not-as-cool mornings. Following the **20th**, 1st-order airports' month-to-date temperature departures were mainly 4.5 to 5.0 degrees below normal; yet after the few days of anomalous warmth these departures were brought much closer to normal.

Site	October 2022 Average Temp	October 2022 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	54.5	-1.0	79 on 23 rd	28 on 20 th
Lafayette	53.3	-0.4	79 on 22 nd , 23 rd	26 on 20 th
Muncie	55.0	-0.8	79 on 5 th , 22 nd	29 on 27 th
Terre Haute	54.2	-0.7	80 on 22 nd , 23 rd	28 on 20 th
Bloomington (*)	M	M	80 on 23 rd	28 on 20 th
Shelbyville	55.7	-0.4	80 on 23 rd	30 on 20 th
Eagle Creek Airpark	54.4	-1.1	79 on 23 rd	31 on 20 th

(*) Bloomington's max and min temperatures were missing during the 1st through the 6th

At Indianapolis, October 2022's daily average temperatures were above normal on 12 days, below normal on 15 days and at normal on 4 days. It was the **58th coolest** October for the Indianapolis Area since weather records began in 1871, placing it in the 38th percentile.

Precipitation

Following the release of the new 30-year climatological normals (1991-2020), October has overall seen a slight increase in normal precipitation than during the previous 30 years (1981-2010). The most noticeable, yet modest increases occurred across the center of the region: Bloomington (+0.17"), Eagle Creek Airpark (+0.14"), and Indianapolis (+0.10"), while a slight downward trend was again observed at Terre Haute (-0.13"); the remaining sites saw negligible changes. The new normals for October rainfall average near 3.25", ranging from 2.91" at Lafayette and 2.96" at Muncie, to 3.70" at Bloomington. Indianapolis' normal October precipitation increased from 3.12" to 3.22".

The October 4th Drought Monitor update (released on October 6th) revealed **Abnormally Dry (D0)** conditions expanding back into mainly the region's northern counties: including Lafayette, Crawfordsville, Greencastle, Terre Haute and points north and west through the Wabash Valley, as well as essentially all of Carroll, Howard, Delaware and Randolph Counties, and most of Tipton, Madison and Henry Counties. **D0** also expanded into most of southern Jackson County with this update. Light rain from the evening of the 5th to midday on the 6th produced a band of 0.05-0.15" along and near Indiana Route 46, with as much as 0.13" in Bloomington and 0.15" in Columbus (Bartholomew Co.); with the overall dry pattern continuing: the majority of the region, including Indianapolis, had not measured more than a few hundredths of precipitation since September 24th.

The October 11th Drought Monitor update found **D0** expanding over most of the state and local region, although a broad patch of central Indiana was still free of drought conditions around the Indianapolis Metro and points both to the north-northwest and the southeast, from as far as Clinton County to Decatur and Rush Counties. Early morning on the 12th through dawn on the 13th brought measureable rain to nearly the entire region, even though areas outside of the Wabash Valley reported under 0.20"; 0.59" was observed west of New Goshen (Vigo Co.). The 14th then found more modest rainfall grace areas north/west of I-70/I-69 for a few hours through the overnight, with as much as 0.37" near Frankfort (Clinton Co.).

On the 17th, isolated late-day rain showers north and east of Indianapolis transitioned to a more organized band of rain/snow showers over the Indianapolis Metro and points north through the middle of the overnight, before locally and briefly moderate/heavy snow fell between downtown Indianapolis and Bloomington later at night (even though precipitation type remained all rain over far southeastern counties). Snow tapered off towards dawn on the 18th, with greatest accumulations (on grassy surfaces) of 0.5" found in portions of Morgan County from Brooklyn to east of Martinsville. A thinner coating was measured over most of Hendricks and Johnson Counties, with measurable snow found as far south as Beanblossom (Brown Co.). Snow melted as it fell onto the warm ground, with this first-snow-of-the-season reported as a trace across much of the region – from the northern tier of counties down to southern Lawrence County.

The continued lack of any *appreciable* rains led to one-week trends in drought increasing by almost one intensity level across the region: the October 18th update had **Moderate Drought (D1)** re-appear for the first time since the August 9th update, enveloping most of Delaware,

Henry and Randolph Counties, as well as from just south of Spencer and Bloomington, down to essentially all of Daviess, Martin and Lawrence Counties. All of the region's remaining ~80% either maintained or entered **D0**. The October 25th update showed drought conditions continuing to worsen, with **D1** enveloping most of Indiana, while about half of the central Indiana region remained in **D0** – around the Indianapolis Metro and west-northwestward in between corridors to Terre Haute and Lafayette.

Indeed, the dry pattern was exemplified through October's first 24 days, when most locations only observed 0.10-0.50"; while less than 0.10" was totaled along the US-50 corridor, east-central counties, and southwestern portions of the Indianapolis Metro. Indianapolis officially observed only 0.09" through this 24-day period, while **no measurable precipitation** was recorded across western portions of Morgan County, as well as at North Vernon 2 ESE.

October 2022 finally picked-up a significant rainfall, if only reaching this distinction over the western half of the region. From around dawn on the 25th to the morning of the 26th, several rounds of rain brought a well needed **1.00-2.00"** soaking to these counties, while 0.40-**1.00"** storm totals were found across the region's eastern half. The final round of showers that fell over the upper Wabash Valley pre-dawn on the 26th led to local maximums: **2.70"** along the Illinois line at the Pence 1 SW COOP site (Warren Co.), and **2.23"** near Otterbein (Tippecanoe Co.), with as much as much as **2.12"** near Lafayette. A rainfall gradient over western portions of the Indianapolis Metro followed the bands of rain through the 25th's late evening – while ~0.65" was reported both west of Greenwood (Johnson Co.) and south of Fountain Square (Marion Co.), **1.33"** was observed in both Avon and Brownsburg (Hendricks Co.), with these greater amounts extending as far south as a **1.41"** report northeast of Spencer (Owen Co.).

October ended with additional light/moderate rainfalls. Another weakening system lifting from the southern Plains into the Midwest brought a slug of moderate to briefly heavy showers across southern counties on the 30th, before lighter overnight rains tracked near the I-70 corridor; 1-days totals by dawn on the 31st were generally 0.50-1.00" across the southeastern half of the region, with reports as great as **1.10"** at the Purdue Oolitic Farm's automated gauge site (Lawrence Co.) and **1.03"** in Beanblossom. Scattered showers on the 31st brought additional light rainfall, with readings approaching 0.50" both northwest of West Lafayette and east of Winchester (Randolph Co.). 2-day totals included **1.36"** north of Mitchell (Lawrence Co.), while 0.80" in Anderson (Madison Co.) was the greatest sum north of Interstate 70.

Overall, October 2022's precipitation was mainly well below normal, with monthly totals of 1.00-2.00" common across central Indiana. Modest variations in rainfall distribution ranged from several 0.85-0.99" totals south of Muncie through east-central counties ... to generally 1.75-2.15" sums through south-central zones, in a circular patch centered about southern Monroe County ... to numerous 2.40-3.20" reported totals across Tippecanoe County and points to the west and southwest. Extremes ranged from values just shy of 0.90" in both Macedonia (Delaware Co.) and east of Lewisville (Henry Co.) ... to **3.37"** at Pence 1 SW. Across 1st-order airports with complete data, monthly totals ranged from only 33% of normal at Muncie to 45% of normal at Eagle Creek Airpark. This was the driest October since 1994 at New Castle 3 SW (**0.92"**) as well as the WWTPs at both Muncie (**1.08"**) and Greenfield (**1.38"**), with the low sum at New Castle an 18-year return period for the station. Viewing sites with a ~24-

year data period across northern portions of the Indianapolis Metro, Castleton 2 S' **1.09"** undercut 2010's total for the station's driest October on record, while Carmel 3 E's **1.36"** made for the site's 2nd-driest October on record. It was also the driest October since 2010 at Elnora (**1.23"**) and North Vernon 2 ESE (**1.33"**), while Vincennes 5 NE's **1.45"** total was a 10-year return. The year-to-date total at Indianapolis rose to only **30.83"**, increasing the year's deficit to **6.43"** below normal, continuing the lowest year to date total since 2010. Indianapolis' 2022 precipitation total surpassed 30 inches on the **25th**; of the 22 Octobers this century, only 2 did not reach the 30" mark until later in the year – 2007 (**11/12**) and 2010 (**11/25**).

Site	October 2022 Precipitation	October 2022 Dep from Nml	Wettest Day	Longest Dry Stretch
Indianapolis Intl AP	1.42	-1.80	1.06 on 25 th	10 days, 9/26-10/5
Lafayette	1.75	-1.16	1.10 on 25 th	10 days, 15 th -24 th
Muncie	0.98	-1.98	0.40 on 25 th	16 days, 9/26-10/11
Terre Haute	1.32	-2.12	0.76 on 25 th	10 days, 9/26-10/5
Bloomington (*)	1.94INC	M	0.80 on 25 th	10 days, 9/26-10/5
Shelbyville (**)	M	M	M on 25 th	10 days, 9/26-10/5
Eagle Creek Airpark	1.46	-1.79	1.00 on 25 th	10 days, 9/26-10/5

(*) Bloomington's observed precipitation was missing on the 6th

(**) Shelbyville's observed precipitation was missing on the 25th, 30th, and 31st

October 2022 was the **35th Driest** October in the Indianapolis Area since weather records began in 1871, placing it in the 23rd percentile for precipitation of all recorded Octobers. October 2022's below normal precipitation at Indianapolis continued September 2022's dry trend, yet was in contrast to the above normal precipitation recorded over the last three Octobers, including 2021 which was the wettest October (7.86") since 1986.

Severe Weather

October 2022 was not only devoid of severe weather, but none of the seven 1st-order airports even observed thunder – an ongoing streak since September 22nd. See the Miscellaneous section (below) for details regarding the month's consistently breezy conditions and isolated wildfires.

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 – Winds, Thunder, Fog & More

October 2022's strongest observed wind gust at any of the seven 1st-order airports was a 49 mph observation at Eagle Creek Airpark on the **14th**, although the month was quite breezy, with daily peak gusts reaching 30 mph or greater for most of the seven sites on 9 days during a two-week period (**12th-25th**). Most outstanding during this period was the **13th** when Indianapolis and Lafayette gusted to 42 mph and 40 mph, respectively; the **14th** when four other 1st-order stations recorded gusts to 37-39 mph; and the **17th** when five of the seven peaked at 35-36 mph. For the month winds gusted to 30 mph or higher on 13 days at Muncie, 11 days at Lafayette and Terre Haute, and 10 days at Indianapolis.

Fog was noticeably less prevalent than in September 2022, ranging in frequency from 5 days at Indianapolis to 10 days at Lafayette and Muncie, and 11 days at Terre Haute. Fog occurred at all sites on the **25th, 26th, 31st**, and at most sites on the **4th, 12th, 13th, 28th, 27th, and 30th**. Fog was reported on 6 of the month's last 7 days at both Bloomington and Terre Haute.

Dense fog was infrequent, observed at Muncie on the **4th and 27th**, at Lafayette on the **12th**, and at Indianapolis on the **30th**.

No thunder was reported at any of the seven 1st-order airports, which continued this region-wide trend since September **21st**.

Relative humidity (RH) across the 1st-order airports was quite low both during October's first week as well as occasionally through the middle of the month, with Muncie and Shelbyville often observing the lowest daily values. Shelbyville reported 17-19% minimum RH on the **3rd-5th**, while Muncie dropped to 15% on both the **4th and 5th**, and Lafayette and Terre Haute also observed a 19% minimum on the **5th**. The **14th** RH minimums ranged from 13% at Shelbyville to 17% at Terre Haute, while a ~35-acre grass fire burned in Shelby County, and a few brief, smaller fires were reported in Sullivan County. Very low humidity occurred again on the **20th**, with RH values ranging from 15% at Muncie to 18% at Terre Haute. The **21st**'s minimum RH was 21-24% across all 1st-order airports, while a fire in east-central Hancock County lead to smoke being observed crossing Interstate 70.

November 2022 Outlook

The official outlook for November 2022 from the Climate Prediction Center indicates equal chances of above, below, or near normal conditions for both temperature and precipitation across central Indiana. The normal November temperature at Indianapolis is **43.3** degrees. The normal November precipitation at Indianapolis is **3.45"**.

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

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