

Central Indiana

May 2023 Climate Summary

48th Warmest May on record at Indianapolis

50th Driest May on record at Indianapolis

Temperatures

May 2023 continued April's trend of overall near to slightly above normal temperatures, and marked eight of the past ten months that have finished within ~1 degree of normal at Indianapolis (with the anomalously mild mid- to late winter 2022-23 being the only outliers). May 2023 did exhibit a noticeable gradient in trends across northern counties, however, with Lafayette finishing 1.7 degrees above normal while Muncie was nearly a degree below the seasonable mark. May's typical moderating trend was exemplified by quite cool conditions on the 1st-4th and early summer warmth on the 28th-31st; in between, milder trends were observed through both the 6th-8th and 12th-14th, while overall slightly below readings through the month's 3rd and 4th weeks were most pronounced on the 20th-21st and 25th-27th. Several lovely late spring days were on display through May 2023, albeit at the expense of increasingly abnormally dry conditions.

The 1st continued the unseasonably chilly trend from the very end of April - highs only reached the mid-40s at several sites, with 43F at Bloomington Indiana U. and Castleton 2 S (which was actually Bob McLain's lowest May maximum in his site's 23-year record); Indianapolis managed 48F which would end up being 9 degrees lower than any other day of the month. Quite cool conditions continued through the morning of the 4th, with minimum readings around 40F gradually trending lower under the decreasing cloud trend; nearly all sites dropped into the 30s for at least one morning, the Farmland 5 NNW (Randolph Co.) COOP station's 32F on the 4th was the region's lone freeze for the month, while 33F was also observed at Rockville on both the 3rd and 4th and at the New Castle 3 SW (Henry Co.) COOP station on the 4th, Indianapolis respective lows were 40F and 38F. Considerable cloudiness held Muncie to 57F or lower

through the **3rd**, leading 4 consecutive days at least 10 degrees below normal - this more pronounced early-month trend contributed to the site's below normal monthly average.

A milder trend surrounded the month's first weekend over the **6th-8th**, with lows often around 60F and highs in the mid-70s to low 80s; the **7th** brought the warmest afternoon for most locations, with **81F** reported at Lafayette, Muncie, and COOP stations at West Lafayette 6 NW (Tippecanoe Co.) and Kokomo 3 WSW (Howard Co.), **81F** appeared again on the **8th** at two other COOP stations - Shoals 8 S (Martin Co.) and Vincennes 5 NE (Knox Co.); Indianapolis reached 79F and 76F, respectively. Unseasonably mild mornings then drove an even warmer trend through May's second weekend on the **12th-14th**: lows in the 60s were highest on the **13th** when Shoals 8 S only fell to **70F**, and **68F** was observed at both the Washington 1 W (Davies Co.) and Farmersburg TV-2 (Sullivan Co.) COOP stations; Indianapolis' minimums of **66F** on both the **12th** and **13th** were matched on the **31st** for the highest of the month. Every reporting site hit the low to mid-80s for at least one day through this warmer stretch, with **85F** reached at both the Tipton 5 SW (Tipton Co.) COOP station on the **12th**, and Vincennes 5 NE on the **13th**; Indianapolis peaked at 79F and 83F, respectively.

Following several days with near-normal temperatures, a brief cooler period arrived for the month's third weekend: highs were lowest on the **20th**, generally in the mid-60s to around 70F despite ample sun, due to the, at times, robust north-northwesterly breezes; only **63F** was managed at both Farmland 5 NNW and Kokomo 3 WSW, while Indianapolis reached 67F. The following morning (**21st**) brought widespread 40s to the region, with lowest readings **39F** at Rockville and **40F** at Farmland 5 NNW; Indianapolis dropped to 46F. Perhaps more noteworthy on the **21st** were impressive diurnal temperature ranges, as great as 40 degrees at Rockville, while the Crawfordsville 6 SE (Montgomery Co.) COOP station rose 36 degrees, to a high of 77F. The start of the late month dry pattern on the **22nd-24th** exhibited lovely late spring weather with days running from cool, crisp early mornings in the 50s to warm afternoons in the 80s. The **25th-27th** brought continued dry, yet slightly cooler weather lead by fresh east-northeasterly breezes that only allowed 70s for highs; coolest mornings were at Rockville (**41F** on the **25th**) and Farmland 5 NNW (**42F** on the **26th**); Indianapolis recorded lows of 50F and 49F, respectively.

Central Indiana finally had a taste of early summer through May's final days, as light southeasterly winds allowed for a steady increase of warmth and light to moderate humidity over the **29th-31st**. First-**90F**'s were hit at Shelbyville on the **29th**, the Perrysville 4 WNW (Vermillion Co.) COOP station on the **30th**, and several other sites on the **31st**: Lafayette, Muncie, Terre Haute, Farmersburg TV-2, and Rockville; Indianapolis respective highs were 86F, 85F and 88F. Low temperatures meanwhile trended through the 50s to the low to mid-60s by the **31st**, with highest reported daily minimums on the **31st** of **66F** at Indianapolis and **65F** at Farmersburg TV-2. Readings trending warmer along the Wabash Valley during these several final days made the difference for Lafayette's monthly average temperature landing ~1 degree higher than other 1st-order sites.

Following the very mild May 2022, **May 2023** was the second warmest at Indianapolis since the all-time hottest - May 2018; yet at Muncie it was the third coolest May of the last six years. Indianapolis recorded a unique distinction this spring: as it was only the second year of the

modern era to reach 80-84F on as many as 12 days, yet not hit 85F until May 29th (13 days later than normal). 1st-order sites that hit 90F in late May were about 1 week ahead of schedule, with their respective normal first-90F dates ranging from June 3rd at Shelbyville and Terre Haute to June 10th-11th at Muncie-Lafayette. Indianapolis' normal first-90F is on June 19th.

Site	May 2023 Average Temp	May 2023 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	64.5	+0.9	88 on 31 st	38 on 4 th
Lafayette	63.3	+1.7	90 on 31 st	35 on 4 th
Muncie	63.6	-0.8	90 on 31 st	36 on 4 th
Terre Haute	64.8	+0.8	90 on 31 st	35 on 4 th
Bloomington	64.1	+0.3	88 on 31 st	37 on 4 th
Shelbyville	66.0	+0.9	91 on 29 th , 31 st	37 on 4 th
Eagle Creek Airpark	64.1	+0.3	88 on 31 st	38 on 4 th

At Indianapolis, May 2023's daily average temperatures were above normal on 18 days and below normal on 13 days. It was the 48th warmest May for the Indianapolis Area since weather records began in 1871, placing it in the 69th percentile.

Precipitation

May 2023 continued the dry trend that began in April. Despite strides made through the wet start of 2023 to counter what had been a dry end to 2022, the normally wet May finished 2-3" below seasonable levels across much of the region. Indianapolis' 2.84" was not enough to keep the city's annual precipitation total from falling below normal. A few, mainly light to moderate rainfall events prevailed through the first three weeks, before a prolonged late month dry period. The summery pattern seen in May's final days promoted isolated downpours that did little to improve the trend of the preceding two months. May was devoid of main stem river flooding, while a few smaller rivers/streams did overrun their banks on the 7th-8th, and 13th.

The month started with light rain on the 1st bringing 0.20-0.50" along and north of the I-74 corridor. The May 2nd Drought Monitor update (released on May 4th) showed drought intensity returning to parts of the central Indiana region for the first time since February 28th: the **Abnormally Dry** conditions (**D0**) that were enveloping much of central Illinois as May began also reached farther east to all of Parke and Vermillion Counties, as well as much of Fountain, Vigo, and Warren Counties.

Several rounds of scattered to widespread showers and thunderstorms crossed the region on the 6th-8th, with the majority of rain falling through AM hours on the 7th; greatest multi-day rainfall totals were 2.55" east of New Ross (Boone Co.), 2.42" east of Traders Point (Marion

Co.), with several other **2.40-2.46"** reports through Vigo County; the greatest 1-day observations through dawn on the **7th** were **2.08"** west of New Goshen (Vigo Co.) and **2.05"** in Augusta (Marion Co.). Non-main stem river flooding followed on the **7th** for ~4 hours through dawn on Prairie Creek at Lebanon 5 NW (Boone Co.), and (following an elevated low-action stage since April 15th) on Salt Creek at Harrodsburg (Monroe Co.) for ~16 hours during the **7th** into very early on the **8th**. The Mississinewa River at Ridgeville meanwhile crested just shy of flood stage late in the day. The May **9th** drought update indicated **DO** retreating slightly over the western Midwest, with only small portions of Fountain, Vermillion, and Warren Counties still included. Dry conditions prevailed on the **9th-11th**.

The **12th-16th** included several rounds of numerous to widespread rain showers that were nonetheless generally underperforming, with most of the region accumulating only **0.30-1.00"** over the 5 days. Several rounds of isolated heavy rains crossed the region on the **13th**: a morning band of torrential rains through the northeastern half of Randolph County brought **3.34"** between Winchester and Union City, thunderstorms continuing during the day from Tippecanoe to Henry County produced up to **1.25"** in Anderson (Madison Co.), before afternoon and overnight rains from western portions of the Indianapolis Metro down to Lawrence County dropped **1.29"** in Clayton (Hendricks Co.), **1.79"** northeast of Freeman (Owen Co.), and **1.63"** south of Unionville (Monroe Co.). The Mississinewa River at Ridgeville flooded for nearly 15 hours on the **13th**, including 5.5 hours in **moderate flood** around the early evening crest. 5-day rainfall extremes ranged from **3.37"** east of Winchester, **2.71"** near Needmore (Brown Co.), and a couple **1.88"** observations in Lawrence County, to no rain at all from Burlington (Carroll Co.) and across parts of Howard County. The very small nugget of **DO** west of Covington stayed status quo through the May **16th** drought update.

The **19th**'s mainly evening showers and storms dropped a solid drink over most of the Indianapolis Metro and points south and east, with the widely scattered heaviest rains totaling up to **1.53"** southwest of Greensburg (Decatur Co.), **1.48"** in Irvington (Marion Co.), and **1.25-1.45"** at several spots in southeastern Owen County; pockets of sub-0.20" observations were also found in west-central counties and immediately southwest of Bloomington. The May **23rd** drought update brought another move of **DO** as it expanded again into northwestern central Indiana, including all locations immediately along and west of the Wabash River down through Vigo County.

A longer dry period was observed from dawn on the **20th** through noon on the **30th** with no rain reported except for the region's far southeastern corner. This was the longest dry duration for nearly all of the region since a 10-16-day stretch that spanned late September and early October 2022. The transition to an early-summer pattern at end of May was immediately followed by isolated to scattered thunderstorms on the **30th-31st**, which found a fast inch or so of rain under the strongest cells, while most of the region remained dry; Williams Dam (Lawrence Co.) boasted the greatest reports on both days -- **1.53"** on the **30th** and **1.31"** on the **31st**, while **1.08"** was measured south of Seelyville (Vigo Co.) on the **31st**. Perhaps more noteworthy were the very strong gradients in rainfall promoted by the fast-forming, yet slow-moving cells: not 3 miles west of the **1.08"** report, the Terre Haute Airport measured only 0.05"; likewise 0.70" fell at the NWS office, yet 1.3 miles north the Indianapolis Int'l Airport measured only half this amount, also the two Franklin (Johnson Co.) COOP sites measured 0.70"

and 0.18" despite being barely 2 miles apart. The Williams 3 SW (Martin Co.) COOP site's modest 0.30" two-day total was a whopping 2.54" less than Williams Dam's abundant rain only 3 miles to the northeast. The May 30th drought update finally showed **DO** expanding across almost all of central Indiana, although most of Henry and Randolph Counties, and portions of several far south-central counties remained out of any drought intensity. **DO** or greater had not covered this much of the central Indiana region since the January 10th, 2023 update.

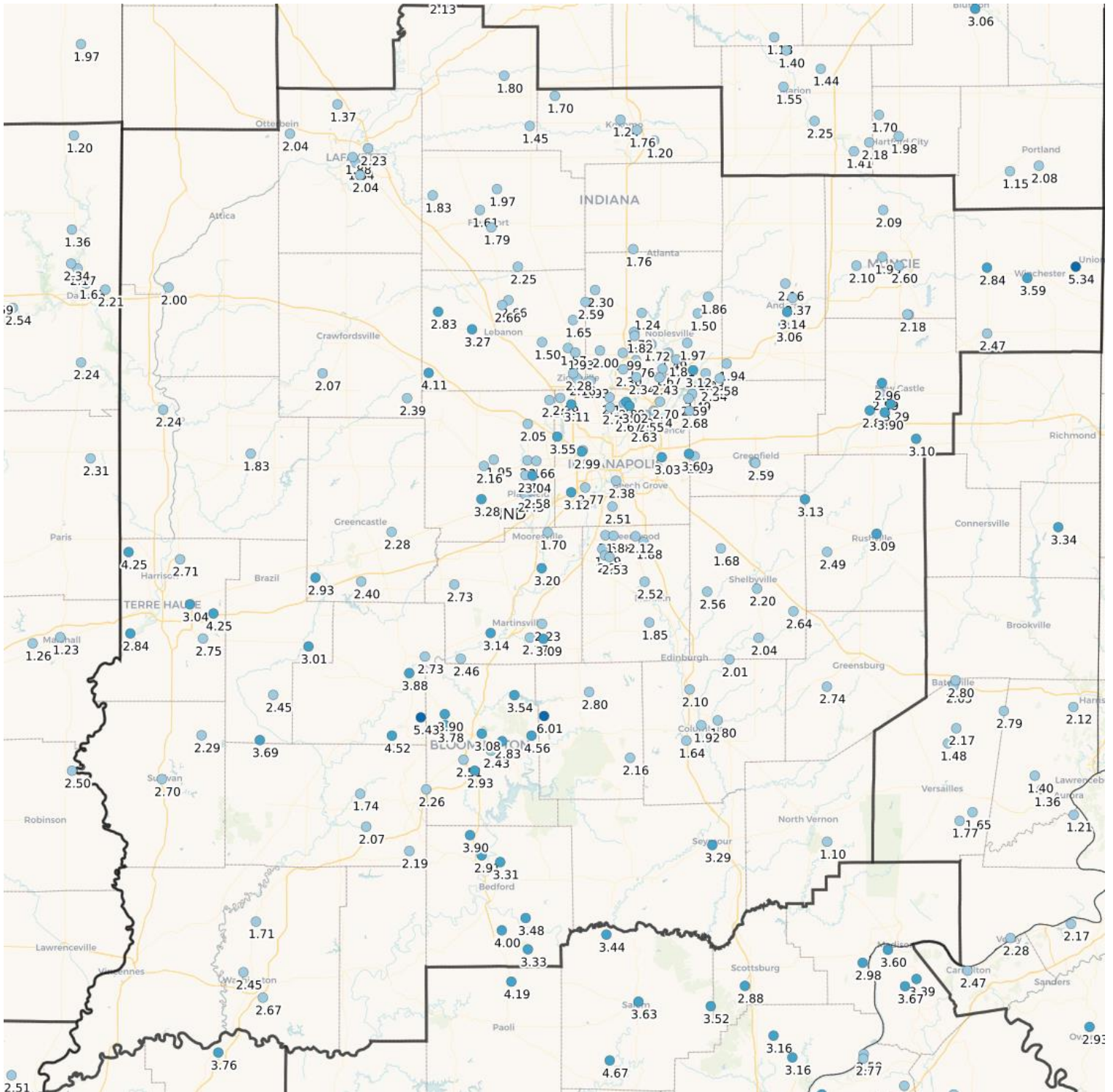
May is normally Indianapolis' second wettest month (behind June), yet May 2023's rather infrequent and often lackluster rainmakers brought less precipitation than a typical winter month to most of the region, with 1.50-3.50" common across much of central Indiana. Several of the 1st-order airports (see table below) intercepted smaller regions of greater (3.00-5.50") rainfall -- which aligned with parts of the Indianapolis, Terre Haute and especially Bloomington areas -- yet tallies at these airports still fell at least one inch short of normal. While central Indiana avoided any organized reappearance of drought intensity through the May 23rd update, abnormally dry conditions west of the Wabash Valley finally overtook most of the region just before month's end. For most sites it was only the driest May since 2018 or 2021, although Shelbyville's 1.60" was the station's lowest for May since records began in 1999. Reviewing Local COOP stations, it was the driest May since 2007 at Frankfort Disposal, Franklin WWTP, Perrysville 4 WNW and Shelbyville Sewage; while greatest COOP totals included **4.09"** at Spencer and **3.96"** at Shoals 8 S. Indianapolis' precipitation over the last 12 months further deteriorated to 33.99", which is 9.64" below normal, nearly 19" below the preceding June-May's sum, and continues to yield the driest such period in 23 years. Indianapolis' water year to date (October 2022–May 2023) precipitation, 23.15", decreased again to 83% of normal. The 2023 year-to-date total at Indianapolis (led by the very wet March) rose to **17.68"**, yet fell below normal by **0.65"**. No main stem river points flooded in May, although the Wabash River did reach action stage from Lafayette down to Montezuma for both ~3 days around the **8th-11th**, and another ~2 days within the **14th-17th**; while action stage along the White River was limited to Elliston down to Edwardsport, mainly within the **8th-10th**.

Site	May 2023 Precipitation	May 2023 Dep from Nml	Wettest Day	Longest Dry Stretch
Indianapolis Intl AP	2.84	-1.91	0.84 on 19th	10 days, 21 th -30 th
Lafayette (*)	0.93INC	M	M	11 days, 20 th -30 th
Muncie	2.15	-2.21	0.75 on 7th	9 days, 21 th -29 th
Terre Haute	3.36	-1.35	2.12 on 7th	10 days, 21 th -30 th
Bloomington	3.43	-1.04	1.68 on 7th	9 days, 21 th -29 th
Shelbyville	1.60	-3.02	0.62 on 7th	10 days, 21 th -30 th
Eagle Creek Airpark	3.09	-1.23	1.36 on 7th	9 days, 21 th -29 th

* Precipitation was incomplete at Lafayette on the **19th**.

May 2023 was the **50th driest** May in the Indianapolis Area since weather records began in 1871, placing it in the **33rd percentile** for precipitation of all recorded Mays. This amplified both the below normal rainfall trend seen in both 2021 and 2022, as well as dry trend that began in April 2023.

May 2023 Total Precipitation, Through the Morning of 6/1/2023 As Reported by Central Indiana CoCoRaHS Observers



For the period 700 AM EDT 5/1/2023 -to- 700 AM EDT 6/1/2023, data is unofficial

May 2023's sub-seasonal, and noticeably variable totals were only 35-65% of normal for most locations, although patches of adequate rains (**3.50-5.50"**) were found east of Indianapolis and near Bloomington and Terre Haute.

Miscellaneous – Winds, Thunder, Fog & More

Stronger peak wind gusts were even less frequent across central Indiana than in April 2023. Windy conditions were only widespread on the **1st** when Terre Haute observed 50 mph, and most 1st-order airports gusted to 42 mph or greater; then only isolated strong gusts were reported on the **7th** (Terre Haute's 43 mph) and the **13th** (Indianapolis' **56 mph**). Less-intense, yet noteworthy winds brought 30-39 mph peak gusts to all sites on the **2nd** and most locations on the **19th**; Indianapolis led the pack with peak gusts at or over 30 mph on 7 days, while nearly all other 1st-order sites peaked at 30+ on only 4 or 5 days. All 1st-order sites' gusts peaked under 25 mph on the **4th, 10th, 11th, 13th, 15th, 17th, 18th, 21st, 22nd, and 30th**; with mainly lighter breezes also occurring on the **16th, 23rd, 27th, and 28th**.

Fog frequency followed the rather low pattern established in April, ranging from 6 days at Muncie to 10 days at Shelbyville. All airports reported fog on the **7th**, and **19th**; while fog occurred at most sites on the **1st, 4th, 13th and 20th**. Dense fog at 1st-order airports was limited to only Terre Haute and Shelbyville on the **17th**.

Thunder was quite low for May, yet did occur at all 1st-order sites on the **7th**, and most of these sites on the **6th and 19th**, with Indianapolis one of three sites that reported thunder on the **8th** and the **13th**. Monthly totals ranged from 2 days at Muncie to 5 days at Indianapolis.

Amid the rather quiet and dry month, several strong swings in humidity were present, including higher dewpoints into at least the mid-60s on the **7th-8th, 12th-14th**, and (at central/southern sites) on the **31st**, and dry conditions on the **9th-11th, 16th-18th, 24th-29th**. Highest dewpoints at 1st-order sites were observed on the **13th** when Terre Haute reached 70F for a couple hours in the evening, with 69F at both Lafayette and Bloomington during the day. Low relative humid (RH) values were more prevalent, especially through the month's fourth week: Shelbyville's daily minimum RH values were 22-23% on the **9th-10th**, with the **10th** also bringing 20-25% values to Indianapolis, Lafayette and Bloomington, while Muncie dropped to 21% on the **11th**; Muncie was the lone drier spot on the **16th-18th** with 22-24% each day, except for the **18th** when Lafayette's minimum was 20%; nearly all 1st-order sites recorded RH values of 25% or less on the **24th and 26th**, including 14% at Eagle Creek Airpark on the **24th** and 18% at Lafayette on the **26th**, most sites also saw 21-24% on the **25th**; for the **27th-29th** Lafayette, Muncie and Shelbyville all recorded 20-25% each day, while Marion County sites both dropped to a 24% RH on the **28th**.

The fourth week's corresponding very low dewpoints were led by 20F at Muncie as the **24th** ended, 23F at Eagle Creek Airpark as the **25th** began, and even 26F as far southeast as Shelbyville on the **26th**; Indianapolis' readings followed closely with dewpoints as low as 24F, 31F and 31F on the **25th, 26th, and 27th**, respectively. Anomalously low humidity was not present at only the surface, as the **21st**'s morning weather balloon that was released from the NWS Wilmington, OH office measured a record low precipitable water content through the vertical column.

Severe Weather

Following April's precedent, May 2023's below normal precipitation trend was again extended to the month's severe weather, with yet again only two episodes – large hail focused over northwestern counties on the overnight of the 6th, and a lone **EFU tornado** on the 8th. The 6th's nocturnal thunderstorms were devoid of damaging winds yet brought late evening to early morning hail, reported as large as **2.50"** and **3.00"** in Warren and Fountain Counties, respectively, before **1.25"** hail near Darlington (Montgomery Co.) was followed by several **1.00"** reports across Boone County. A rotating supercell thunderstorm on the 8th spawned a weak landspout **tornado** west of Flora (Carroll Co.), which was rated an EFU as it caused no damage, despite passing near a barn and through power lines.

For further data pertaining to these episodes, check out [May 6-7, 2023 Severe Hail](#) and [May 8, 2023 Tornado](#).

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

June 2023 Outlook

The official outlook for June 2023 from the Climate Prediction Center indicates chances leaning towards above normal temperatures, especially west of Interstate 69, with chances leaning towards below normal precipitation. The normal June temperature at Indianapolis is **73.0** degrees, while the normal June precipitation is **4.95"**.

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