Central Indiana
April 2023 Climate Summary

41st Warmest April on record at Indianapolis *(Tied)*

35th Driest April on record at Indianapolis

Temperatures

April 2023 was near to slightly above normal, continuing the rather seasonable trend seen in now seven of the past nine months: excepting the anomalously mild January and February 2023, all other months since July 2022 have finished within ~1 degree of normal at Indianapolis. Contributing to this overall normal pattern in April 2023 were a week's worth of unseasonably mild days through the month's first half (on the **3rd-5th** and **12th-15th**) and a noticeably cooler latter half that was led by, at times anomalously low, high temperatures (on the **17th**, **22nd-24th**, and **30th**). Days with more seasonable readings, included the **6th-11th** as the slow passage of Canadian high pressure brought a gradual trend from slightly below to slightly above normal marks, as well as the **25th-29th** when more modest sub-normal temperatures persisted. Two daily records were tied at Indianapolis: the **4th**'s high maximum of **80F** (also set in 1882 and 1929), and the **24th**'s low minimum of **28F** (also set in 1910).

April started with near normal temperatures, although a colder morning on the **2nd** brought a freeze across the region's northern tier and down the Wabash Valley, with readings as low as **28F** at Lafayette and at both the Rockville (Parke Co.) and Crawfordsville 6 SE (Montgomery Co.) COOP stations, while Indianapolis dropped to 34F. Very mild conditions followed on the **3rd-5th**, with readings on the **3rd** rebounding as much as 34 degrees during the day at both Eagle Creek Airpark and the Tipton 5 SW (Tipton Co.) COOP station. High temperatures over these three days were mainly in the 70s, except for the **4th** where mid-70s to low 80s prevailed; the Shoals 8 S (Martin Co.) COOP station had the highest marks to start, **79F** on the **3rd** and **84F** on the **4th**; while the Elnora (Daviess Co.) COOP station lead the pack with **79F** on the **5th**; Indianapolis meanwhile topped out at 76F, 80F, and 76F, respectively. Indianapolis' **80F** maximum on the **4th** tied the Area's **daily record** from both 1882 and 1929. The **4th** also saw Bloomington's highest daily minimum of the month, 58F.

The **6th** was noticeably cooler with maximums only around 50F, and as low as 48F at the West Lafayette 6 NW (Tippecanoe Co.) COOP station, while Indianapolis reached 52F. Morning lows on the **7th** found freezing temperatures across many western and northern zones, with **28F** reported at both Lafayette and Rockville. A slow moderation followed through the **11th** from

slightly below to slightly above normal readings, with highs trending from the 50s to the 70s while low temperatures were maintained between the mid-30s and low 40s.

April **12th-15th** brought four warm days to the region with highs around 80F and daily low temperatures exhibiting a rather broad distribution while trending from roughly 50F to roughly 60F. The **12th** was as warm as **81F** at Shoals 8 S, Rockville, and the Kokomo 3 WSW (Howard Co.) COOP station. The **13th** saw the greatest diurnal ranges after a cool morning in the 40s, with Shoals 8 S again taking the top ob (**84F**); Bloomington meanwhile rose 40 degrees from 41F to 81F. The **14th** brought Indianapolis' warmest morning of the month (59F) before the day's highest maximum (**82F**) was recorded at Shoals 8 S. The **15th** saw April's highest minimums at eastern sites, including a very mild 63F at Muncie; afternoon highs peaked as high as **83F** at Shelbyville, Shoals 8 S, and Tipton 5 SW.

April's third week had generally faster changes in temperature trends, starting with a fast transition through the **16th** to much cooler weather. The **17th's** morning lows were down to the 30s, although only Lafayette dropped to **32F**; a sharp edge between overcast and clear skies across the region brought a strong gradient in afternoon maximums, ranging from 38F at Farmland 5 NNW (Randolph Co.) to 64F at Shoals 8 S, with Farmland's being the record low-high for the date of the station's 110 years of data; Lafayette and Muncie also observed their low-high for the month, 43F and 42F, respectively; while Indianapolis managed 52F. The **18th** saw the most widespread freeze of the month to-date, with only southwestern and far southern counties staying above freezing; the lowest reports were **26F** at Rockville, and 27F at both Lafayette and the Rushville (Rush Co.) COOP station; Indianapolis dropped to 30F, the airport's first freezing mark since March 30th.

Another impressive moderation followed from the morning of the **18th** to the afternoon of the **19th**: temperatures on the **18th** rose over 30 degrees at most sites, and by 36 degrees at the Martinsville 2 SW (Morgan Co.) COOP station; highs rebounded to the 60s on the **18th**, before mainly low 80s returned on the **19th**. The **20th's** mild morning drove the day's overall anomalous warmth, with western sites reporting their highest minimum of the month, including 61F at the Farmersburg TV-2 (Sullivan Co.) COOP station; mid-80s were common by the late afternoon, with greatest warmth at Martinsville 2 SW, Shoals 8 S, and the Columbus (Bartholomew Co.) COOP station which all hit **86F**; Indianapolis' day ranged from 60F to 84F. However this warmth was short lived, as another transition to cooler weather occurred on the **21st**, with a 24-hour temperature decrease as great as 23 degrees at Terre Haute.

The remainder of the month featured nine consecutive days below normal which led the so-far mild April to being moderated to near- or only slightly above normal levels. This trend included both unseasonably cool conditions on the **22nd-24th**, followed by a more reasonable chill for late April, before a cooler end to the month on the **30th**. As was seen earlier in April, variations in daily high temperatures set the trend while lows were steadier, varying from mainly the mid-30s to mid-40s through this last week, with a freezing temperatures observed on a few mornings. The lowest maximums, near the 45-55F range, included 44F on the **22nd** at West Lafayette 6 NW, 42F on the **23rd** at Rockville, and 50F on the **24th** at several eastern tier sites, including the Greenfield (Hancock Co.) and New Castle 3 SW (Henry Co.) COOP stations; Indianapolis peaked at 54F, 45F, and 54F, respectively, with the very chilly **24th** maximum

coming within 3 degrees of the record low from 1927. Corresponding morning lows on the **23rd** were as low as **31F** at Rockville, and 32F at some Tippecanoe County stations and Castleton 2 S (Marion Co.). The **24th** brought the region's first widespread freeze since March, with upper 20s common, and even 30F reported by the Seymour 1 WSW (Jackson Co.) CCOOP, while Rockville reported **21F**! Rockville's low was not only a daily record, but also the latest-ever reading so low in the site's 128-year period, surpassing 19F on 4/17/2020. The **26th** was April's last cold morning, wherein Lafayette and West Lafayette 6 NW both dropped to **29F**, while 32F was measured at Farmland 5 NNW and Rockville. Indianapolis' lows on the **23rd**, **24th**, and **26th** were 34F, **28F**, and 39F, respectively; with the **24th**'s minimum tying the **record low** from 1910. Finally, April ended with a reinforcing cool blast on the **30th**, with considerable cloudiness holding highs at most locations to only the low to mid-50s, while West Lafayette 6 NW only reached 45F, and the NWS Indianapolis office (WFO) peaked at a chilly 46F.

The frequency of April mornings at or below freezing across central Indiana ranges from normally 3 at Eagle Creek Airpark to 7 at Lafayette, with all other 1st-order sites normally tallying 4 freezing days. April 2023's count was about one day less than normal, with 2 freezes at Shelbyville and Marion County sites, and 7 at Lafayette. Indianapolis tallied 12 days that peaked under 60F -- this was the first time an above-normal April had so many chillier daytimes since 14 such days in 2009. Indianapolis' April 2023 temperatures were only slightly above normal, yet it was the mildest April since the unseasonably mild April 2017. April 2023 was also the mildest in six years at Eagle Creek Airpark, yet most other 1st-order sites observed only their mildest April since 2019 or 2021.

Site	April 2023 Average Temp	April 2023 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	54.2	+0.6	84 on 20th	28 on 24th
Lafayette	52.0	+0.9	83 on 20th	27 on 18th, 24th
Muncie	53.6	0.0	85 on 20th	34 on 26th, 27th
Terre Haute	54.1	+0.2	84 on 20th	**26** on 24th
Bloomington	54.3	0.0	85 on 20th	**26** on 24th
Shelbyville	55.2	+0.7	**87** on 20th	30 on 24th
Eagle Creek Airpark	53.9	+0.3	84 on 20th	30 on 24th

At Indianapolis, April 2023's daily average temperatures were above normal on 14 days, below normal on 14 days and at normal on 2 days. Nevertheless it tied for the 41st warmest April for the Indianapolis Area since weather records began in 1871, placing it in the 73rd percentile.

Precipitation

April 2023 took a subtle step back from the general pattern of precipitation recovery that was seen over the preceding four months (led by January and March 2023's above normal precipitation). Despite numerous light to moderate rainfall events, the lack of any widespread heavy rainfall episodes held monthly totals below normal, continuing the overall dry pattern of

the past 12 months. The month's first two weeks trended from significant rains on the **5th** to an extended dry period, that allowed remnant river flooding from March to end. Latter portions of April found occasional scattered or numerous rain showers and even a few northern snow showers on the **17th**, prior to more organized, yet moderated rains to end the month.

River flooding continued as April began along portions of the region's three main stems. The East Fork White River had crested in the final days of March, yet minor flooding continued through Lawrence County points and down to Shoals; the lower White River remained in minor flood along Knox County, with its slow crest passing Hazleton through the **1st**, nearly 9 days of flooding ended at Edwardsport that afternoon. The Wabash River continued in minor flood from Montezuma through all downriver points, except at Mount Carmel where ongoing **moderate flooding** crested pre-dawn on the **1st**. The system that spawned violent and deadly storms over the region during March's final hours lingered into April **1st**, dropping scattered light rainfall over eastern counties pre-dawn before additional light convective afternoon rain showers fell amid windy conditions (see Miscellaneous section below). Upper portions of the Wabash then returned to minor flood, starting at Lafayette late on the **1st** and then at Covington early on the **2nd**; flooding meanwhile ended after 4-7 days along the aforementioned portions of the East Fork White, from late evening on the **1st** through the morning of the **2nd**.

The White River at Edwardsport entered flood once again through the overnight of the **2nd**. Areas of rain fell across southern counties through both AM hours on the **3rd** and then pre-dawn on the **4th** across several southern counties, with no reports exceeding 0.45". The prolonged Wabash River flooding improved through April's first week: Mount Carmel fell out of **moderate flood** late evening on the **2nd**, and the river receded into its banks at Vincennes by the afternoon of the **4th**. The April **4th** U.S. Drought Monitor update (released April **6th**) continued to show no drought intensity over any part of Indiana, and essentially no drought concerns between the Mississippi River and Appalachian Mountains.

The **5th** then brought the month's greatest precipitation event to most locations, courtesy of a widespread soaking rain throughout the daytime hours, including heavier afternoon rains across the region's southeastern half; event totals ranged from around 0.50" over the Upper Wabash Valley to several **1.50-1.80"+** reports along the US-50 corridor, led by **2.61"** east of Shoals (Martin Co.), while **1.55"** was measured as far northwest as Freeman (Owen Co.). Despite the lighter rains across northern counties, river flooding ended after ~3 days at Lafayette/Covington on the **4th**/**5th**, while longer duration minor flooding continued to wane farther down the Wabash.

Upward trends in discharge, however, occurred farther south, with smaller basins the first to respond: minor flooding started late day on the **5th** along both Brush Creek at Nebraska (Jennings Co.) and Beaver Creek at Shoals (Martin Co.); Brush Creek would return to its banks by late evening, yet Brush Creek at Shoals crested close to **moderate flood** around midnight, and continued to flood through the afternoon of the **6th**. A few main stem points that had recently returned to their banks re-entered minor flood for an additional 1-3 days – on the Wabash River at Vincennes, East Fork White at Seymour, and White River at Edwardsport, all starting on the **5th**-**6th**. Ongoing river flooding elsewhere across southern zones was prolonged by the rain -- what had been slowly falling flood stages at several points were abruptly replaced

by rising flood waters. The East Fork White at Rivervale also eventually returned to flood from late evening on the **8th** through the morning of the **10th**.

The month's second week was mainly dry – bringing the region's longest break from measurable precipitation since early February. The ongoing river flooding had subtle secondary crests, on the Wabash at Vincennes on the **6th**, and on the White along Knox County on the **7th**-**8th**. The spring 2023 river flood season came to an end soon after: on the middle Wabash at Montezuma down to Riverton on the **6th**-**9th**, at Mount Carmel early on the **11th**; and on the lower White, late on the **12th** at Petersburg and on the morning of the **13th** at Hazleton. This concluded ~16 days in flood at both Riverton and Mount Carmel, and over 20 days of flooding at Hazleton.

The latter portions of April included several, generally light to moderate precipitation events. The **14th** brought scattered PM showers from western portions of the Indianapolis Metro through several southern counties, with small-scale embedded downpours that totaled as much as 0.51" east of Martinsville (Morgan Co.) and 0.46" in Avon (Hendricks Co.). Numerous light showers on the **15th** led to widespread post-cold frontal light rain on the **16th**, with the greatest 2-day precipitation total report through dawn on the **17th** of only 0.45" in Plainfield (Hendricks Co.), while most locations observed less than half as much. The precipitation transitioned to late season snow showers for the northern half of the region during mainly AM hours on the **17th**; the only measurable snow reports were **0.1"** pre-dawn in Carmel (Hamilton Co.) and **0.2"** that was measured at Kokomo 3 WSW during the day; frozen precipitation was reported in Marion County as far south as Castleton 2 S and Speedway, with no snow officially observed at Indianapolis.

The next storm system slowly deepened over the Upper Midwest, gracing northern portions of central Indiana with light warm frontal rains early on the **20th** … before a steady period of mainly light to moderate rain gradually crossed the region from late day on the **20th** through the night of the **21st**, with rain falling for no more than ~18 hours on any one location; rainfall through dawn on the **21st** was greatest under embedded Wabash valley thunderstorms with **1.21"** in Covington (Fountain Co.) and as much as **1.03"** in the Lafayette area; storm totals elsewhere were generally 0.35-0.75" with several isolated pockets of heavier rain, including **1.28"** in Bowling Green (Clay Co.). The **22nd** found a few rain showers on the back side of the departing system, with embedded graupel north and west of Indianapolis.

April's final days included two moderate rainfall events for central and eastern zones, which helped to bring the month's lackluster precipitation closer to normal over most of the region. Rains through the **27th** overnight, excepting the region's northwestern quadrant, totaled mainly 0.30-**1.05"**, with **1.35"** reported in Rushville (Rush Co.) and **1.10"** in Columbus. The **29th**'s afternoon/evening showers and thunderstorms were followed by lighter late-night rains that, by dawn on the **30th**, totaled mainly 0.15-0.75" with heavier pockets in the vicinities of both Bloomington and Muncie, while a rogue report of 0.94" in Waldron (Shelby Co.) led all observations. Several reports of brief, small hail at the onset of the **30th**'s afternoon showers were received from the Lafayette to Indianapolis areas; the NWS WFO observed a few pea-sized hailstones, yet given none observed at the International Airport 1.3 miles to the north, the official Indianapolis record had no frozen precipitation. Widespread, generally light rain

continued through the **30th**, with reports of an additional 0.10-0.40" through early on May 1st. 4-day totals to end the month ranged from around 0.40" north and west of Crawfordsville, to widespread 0.75-**1.80"** observations over most other locales, with embedded higher reports: **2.29"** at the Muncie Airport and **2.17"** in Rushville. Most 1st order sites picked up 24-38% of their monthly total in these final four days of the month, although Muncie recorded 63% of their April sum.

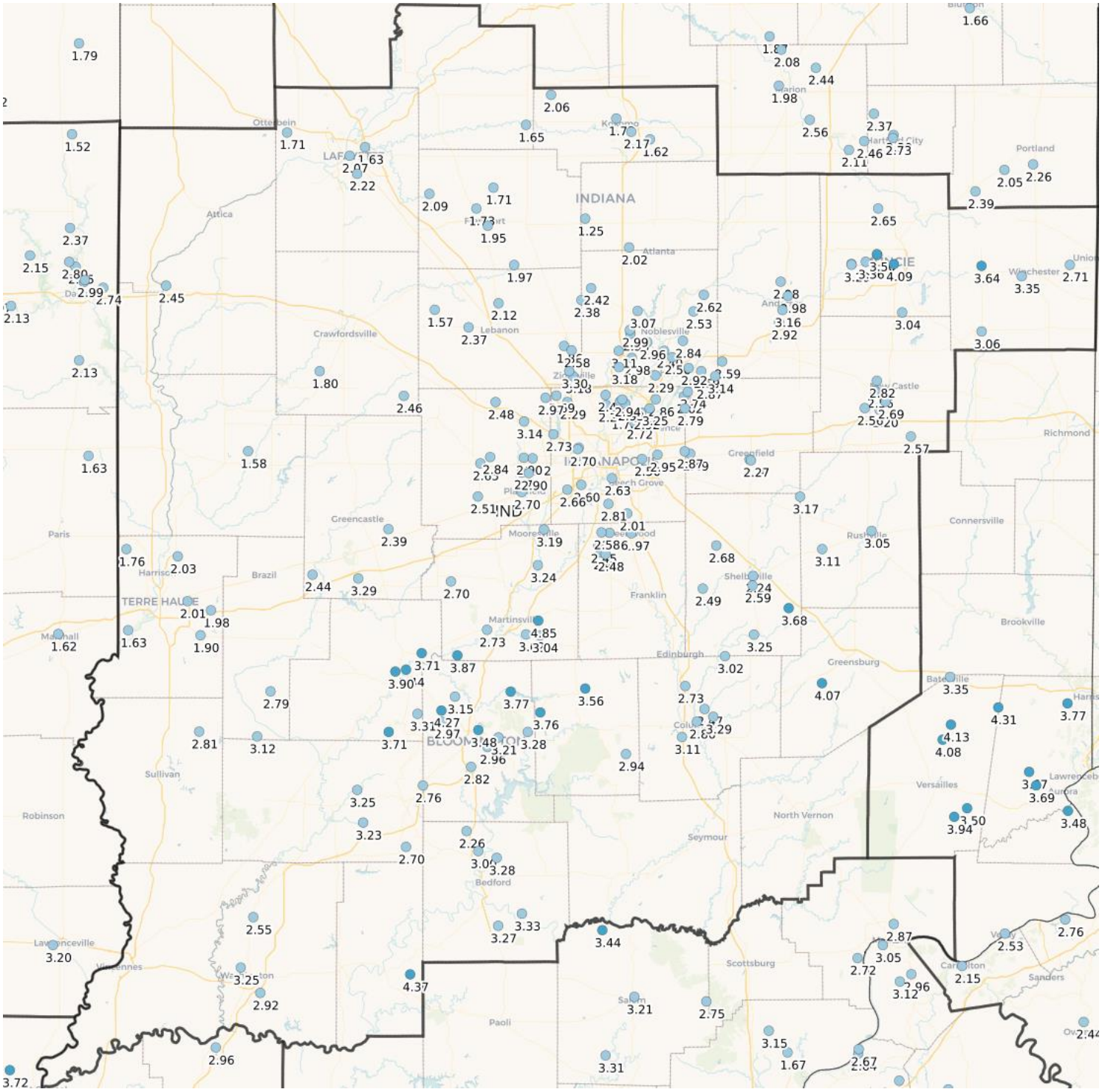
April 2023's precipitation would have been generally adequate for a winter month, yet was below normal to well below normal for April - only a few small areas had near **4.00"**, while a solid majority of the region accumulated only 1.60-3.30" from the numerous light to moderate rains. Nevertheless, central Indiana avoided any reappearance of drought intensity through the April **25th** update. It was only the driest April for most 1st-order airports since recent years (2020-2022), although Terre Haute's 1.91" marked the station's driest since 2008. Local COOP stations followed a similar pattern, with most recording the driest April since only 2020 or 2021, although Farmersburg TV-2 (2.38") and Vincennes 5 NE (2.83") both observed their **driest April since 2004**, Elnora's (2.93") was the station's driest since 2010, and the least precipitation since 2010 was reported from Frankfort Disposal, Tipton 5 SW, and both West Lafayette sites. Indianapolis' precipitation over the last 12 months deteriorated to 34.92", which is 8.71" below normal, nearly 18" below the preceding May-April's sum, and yields the driest such period in 23 years. Indianapolis' water year to date (October 2022–April 2023) precipitation, 20.31", decreased to 88% of normal. The 2023 year-to-date total at Indianapolis (driven by the very wet March) rose to **14.84"**, **1.26"** above normal. April 2023's river flooding saw a transition from numerous sites in minor flood on the **1st** to the conclusion of all spring-season river flooding by the end of the second week, following what was a second crest at many sites courtesy of the **5th**'s significant rains; only minor flooding was observed, except for the Wabash at Mount Carmel, where 2.7 days in moderate flood ended on the late evening of the **2nd**. Frozen precipitation was limited to (mainly unmeasurable) snow showers on the **17th**, isolated graupel on the **22nd**, and brief, small hail on the **30th**; although none of April's frozen precipitation fell south of the I-70 corridor.

Site	April 2023 Precipitation	April 2023 Dep from Nml	Wettest Day	Longest Dry Stretch
Indianapolis Intl AP	2.29	−2.05	0.74 on 5th	8 days, 6th–13th
Lafayette (*)	1.39INC	M	0.78 on 20th	8 days, 6th–13th
Muncie	3.03	−0.86	0.93 on 28th	9 days, 6th–14th
Terre Haute	**1.91**	**−2.80**	0.54 on 5th	10 days, 6th–15th
Bloomington	3.30	−1.64	1.35 on 5th	8 days, 6th–13th
Shelbyville	2.40	−2.14	0.78 on 5th	8 days, 6th–13th
Eagle Creek Airpark	2.65	−1.43	0.80 on 5th	8 days, 6th–13th

* Precipitation was incomplete at Lafayette on the **28th** and **30th**.

April 2023 was the **35th driest** April in the Indianapolis Area since weather records began in 1871, placing it in the **23rd percentile** for precipitation of all recorded Aprils. This contrasted both the copious rains of March 2023, as well as 8 of the last 10 Aprils which were all above normal.

April 2023 Total Precipitation, Through the Morning of 5/1/2023
As Reported by Central Indiana CoCoRaHS Observers



For the period 700 AM EDT 4/1/2023 -to- 700 AM EDT 5/1/2023, data is unofficial

East of I-69, ~0.01-0.15" is missing from pre-dawn on 4/1/23 … up to 0.15" from pre-dawn 5/1/23 may be included in central/northern zones.

April 2023's sub-seasonable monthly totals were generally 50-75% of normal, ranging from **1.50**-**2.50"** over the region's northwestern third, to **3.30-4.40"** in the vicinities of Bloomington, Greensburg and Muncie.

Miscellaneous – Winds, Thunder, Fog & More

Stronger peak wind gusts were not as persistent across central Indiana as in previous months. Windy conditions occurred on the **1st**, **5th**, **16th**, **17th**, **20th** and **30th**. On the **1st**, most 1st-order sites gusted to 53 or 56 mph, while severe intensity was recorded with Indianapolis' gust to **63 mph**. Three of the seven sites passed the severe threshold on the **5th**: **70 mph** at Eagle Creek Airpark, **61 mph** at Terre Haute, and **60 mph** at Indianapolis. Terre Haute lead the pack on the **16th**, **17th**, and **20th**, reporting a peak gust of 46 mph each day; Indianapolis' 46 mph gust on the **30th** was the strongest of 1st-order sites. Less-intense, yet noteworthy winds brought 30-39 mph peak gusts to a majority of sites on the **21st**, **22nd**, and **30th**. Days with peak gusts over 30 mph ranged from 8 at Muncie to 14 at both Lafayette and Terre Haute, while Indianapolis peaked at 30+ mph on 12 days. All 1st-order sites' gusts peaked under 25 mph on the **10th**, **13th**, **14th**, **26th**, and **27th**; with mainly lighter breezes also occurring on the **6th** and **18th**.

Fog was noticeably less common than in March 2023, with frequency ranging from 8 days at Bloomington and Lafayette to 10 days at Indianapolis and Shelbyville. All airports reported fog on the **4th**-**5th**, **28th**, and **30th**; while fog occurred at most sites on the **16th**-**17th**, **21st**, **26th**-**27th**, and **29th**. Dense fog was once again uncommon, occurring at Bloomington and Shelbyville on the **29th**, and again at Shelbyville on the **30th**.

Thunder was infrequent, yet did occur at all 1st-order sites on the **5th**, and most of these sites on the **29th** and **30th**, while confined to only along the Wabash Valley on the **20th**. Monthly totals ranged from 2 days at Muncie and Eagle Creek Airpark to 4 days at Bloomington, Shelbyville and Terre Haute.

Relative humidity (RH) and dewpoint extremes across the 1st-order sites included rather brief moderately-high humidity on the **4th**-**5th**, before several drier days through the second and third weeks of the month. Dewpoints rose to the mid-60s through the **4th**-**5th**, with highest readings of 66F at Terre Haute through the early afternoon on the **4th**, and 65F at Indianapolis briefly after noon on the **5th**. The drier pattern took over soon after, with minimum relative humidity values dropping to 24-25% on the **7th** at Bloomington and Marion County airports, before Bloomington, Terre Haute and Shelbyville all observed minimum RHs of 22-24% on both the **8th** and **9th**. All 1st-order sites reported RHs under 25% on the **10th**, **13th**, and **20th**; with Bloomington leading the pack on each day with 17%, 17%, and 20%, respectively, while Indianapolis followed with 20%, 22%, and 23%, respectively. Additionally, Shelbyville dropped to 24-25% on the **11th**, **12th**, and **26th**; while other marginally-dry values were recorded at Lafayette and Muncie on the **12th** and Bloomington on the **18th**.

Severe Weather

April 2023's below normal precipitation trend was extended to the month's severe weather, with only two episodes – gradient winds on the **1st** that brought isolated severe gusts to mainly central counties, and then a more organized episode of combined gradient and thunderstorm winds from dawn to noon on the **5th**. The **1st**'s gusts, courtesy of the departing system that brought the **March 31st tornado outbreak**, were led by a **63 mph** observation at Indianapolis Int'l Airport and a **61 mph** report in Putnam County, while **58 mph** gusts occurred at both New Palestine (Hancock Co.) and Muncie.

The morning of the **5th** found a nocturnal storm complex decaying while crossing the region, with first, early morning severe gradient winds on the leading edge of light rain, from Vigo County to western and northern portions of the Indianapolis Metro … secondly, damaging thunderstorm winds within the complex from Gosport (Owen Co.) into Marion County … and finally additional cells that developed along and ahead of a late morning squall line, with damaging winds from Montgomery County into north-central zones. Gradient wind damage was focused between Bainbridge (Putnam Co.) and Danville (Hendricks Co.), northwestern Marion County including a **69 mph** gust at Eagle Creek Airpark, and from Avon to Brownsburg (both in Hendricks Co.) to Clermont (Marion Co.). The most notable thunderstorm damage reports ranged from several large trees and power lines downed in Owen County, to two tractor-trailers blown over on Interstate 65 between Lebanon and Whitestown, while Indianapolis Int'l recorded a gust to **62 mph**. A brief, weak **EF0 tornado** crossed US Route 136 just east of New Ross (Montgomery Co.), causing generally minor damage to several structures, and blowing roofing material as far as 500 yards. For further data pertaining to the **5th**'s severe weather, check out April 5, 2023 Severe Storms.

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

May 2023 Outlook

The official outlook for May 2023 from the Climate Prediction Center indicates slightly greater chances of both below normal temperatures and below normal precipitation. The normal May temperature at Indianapolis is **63.6** degrees, while the normal May precipitation is **4.75**".

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

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