

Central Indiana

March 2022

Climate Summary

28th Warmest on record at Indianapolis

40th Wettest on record at Indianapolis

Tied 2nd Least Snowiest on record at Indianapolis

Temperatures

March 2022 was quite mild, averaging 2 to 4 degrees above normal across central Indiana. This included anomalous warmth through both the first and third weeks that was partially offset by unseasonable chill, both briefly during the second week and amid several days of relative cold through the month's final week. Daily temperatures at Indianapolis averaged 10 or more degrees above normal **11** times - the **1st-2nd**, **5th-6th**, **15th-18th**, **21st**, **23rd**, **30th**; and averaged 10 or more degrees below normal on **6** other days: **11th-12th**, **26th-29th**. March 2022 continued the warm pattern also seen during March 2020 and March 2021; although this March was the coolest of these last three at Indianapolis, with March 2022's average temperature having the median value of the past 7 (2016-2022). Upper troughs were numerous over the western and west-central United States throughout March 2022, with downstream southwesterly flow often promoting mild conditions into Indiana; while less-frequent upper-level northwesterly flow supported cold spells.

March began with very mild readings on the **1st** and **2nd** as robust south-southwesterly breezes boosted afternoon highs into the 60s both days. The Shoals 8 S (Martin Co.) COOP weather station peaked at **70F** and **76F**, respectively. On the **2nd** Bloomington and Terre Haute hit 71F and 70F, respectively, the first 70F+ temperatures since early November 2021 at both sites; with several points south and west of these airports topping at **70F**. Indianapolis recorded daily highs of 66F and 68F. The **2nd**'s impressive diurnal changes of +30 degrees were lead by Bloomington's 40-degree rise. After a couple seasonably cool days, strengthening winds from a deepening storm system passing to the northwest brought even more anomalous warmth on the **5th** and **6th**. Introduced by a widespread +33 to +39-degree rise on the **5th**, with the Tipton 5 SW (Tipton Co.) COOP station climbing +41 degrees, temperatures peaked in the 70s, as Shelbyville and

Indianapolis-Eagle Creek both reached **78F**. Indianapolis' **77F** maximum on the **5th** was a daily record, surpassing the 75F mark reached in both 1956 and 1983; this was only the tenth time in the 151-year record that the Indianapolis Area has reached 77F or higher prior to March 15th. The **6th**'s afternoon highs were then generally in the 60s to near 70F, with Shoals reporting **77F** while the Columbus COOP station (Bartholomew Co.) reached **75F**.

On the **7th**, colder air entered the Mid-West, with a 1-day temperature change as great as -30 degrees at the West Lafayette 6 NW COOP station, as daily high temperatures trended from 66F to 36F. Seasonably cool conditions then prevailed through the **10th** amid modest Canadian high pressure. A 48-hour arctic blast then brought unseasonably cold weather from daytime on the **11th** through the morning of the **13th** which included the month's first hard freeze for many central and southern counties. On the **11th**, the Castleton 2 S COOP site (Marion Co.) noted a daytime maximum of only **30F**. The morning of the **12th** was the coldest for most locations, as temperatures ranged from **6F** in Rockville (Parke Co.) to 19F at Shoals 8 S, with an **11F** reading common across several sites north and west of Indianapolis, as well as the Washington 1 W (Daviess Co.) COOP site to the south. Almost all of central Indiana was held below freezing on the **12th** with afternoon highs as low as **21F** at Lafayette and **22F** at the Frankfort Disposal COOP station (Clinton Co.); Indianapolis rebounded to **26F**. The **13th**'s morning lows were a few degrees higher: the Spencer (Owen Co.) COOP site dropped to **12F** while 1st-order airports ranged from **15F** at Indianapolis and Bloomington to 19F at Shelbyville.

The **13th** featured a quick transition back to typical early spring temperatures with several sites along the Wabash Valley, as well as Indianapolis, rebounding by +38 degrees into the low to mid 50s. Moderation then continued through above normal levels, with highs in the 60s common on both the **14th** and **15th**, before the warmth reached unseasonable levels on the **16th** and **17th** where afternoon maximums were commonly in the low 70s and mid 70s, respectively. Shelbyville hit 73F and **75F**; while Indianapolis peaked at 72F and 74F. Highest readings on the **18th** also included **76F** at Shoals 8 S and **75F** at several other COOP stations, including **Perrysville 4 WNW** (Vermillion Co.) and Vincennes 5 NE (Knox Co.). Sites with a late-day observation time recorded the highest 1-day minimum temperatures on the **18th**, with both Farmersburg TV-2 (Sullivan Co.) and Washington 1 W only dropping to **52F**.

The **19th–20th** brought slightly above normal readings, where bright skies on the **20th** helped temperatures rise from the low/mid 30s into the 60s, with the greatest diurnal change of +37 degrees (from 32 to 69) reported at Shoals 8 S. Robust south-southwesterly winds then brought more above normal warmth on the **21st** and the following overnight: Washington 1 W topped out at **74F** while Indianapolis' high was 73F; then Muncie, Shelbyville and Indianapolis-Eagle Creek all had mild lows of 50F, while the North Vernon 2 ESE (Jennings Co.) COOP site only dropped to **54F**. As of the **24th**, March was 5.8 degrees above normal at Indianapolis.

March's only extended cold period occurred late on the **25th** through the **29th** as an area of arctic high pressure, stretching from interior Canada to the Gulf of Mexico, slowly crossed the region. Widespread freezes occurred on the **26th–28th** (including hard freezes for all locations on both the **27th** and **28th**, before most places dropped to around 30F early on the **29th**). Minimum readings in the upper teens were common north and east of Indianapolis on the **28th**, with **13F** recorded at Rockville, **15F** at the New Castle 3 SW COOP station (Henry Co.), and **18F** at the Lafayette

airport. Indianapolis' **27th-28th**'s lows of 24F and 22F made only the second occurrence since 1997 of consecutive mornings below 25F this late in the season. High temperatures during this cold spell were generally in the upper 30s to mid 40s, with Carmel 3 E (Hamilton Co.)'s peak of **32F** on the **26th** the only reported freezing maximum.

On the **30th**, potent southerly winds ahead of a deepening storm system's cold front provided strong warm advection, with temperatures climbing into the mid- to upper 70s across the entire region by late day, with a lone report of **80F** at the Seymour 1 WSW (Jackson Co.) CCOOP station. The **30th**'s pronounced warming was seen across all counties, with diurnal changes of 30+ degrees common, and as great as +39 at Tipton 5 SW (from 40F to 79F). When considering the 2-day trend in readings, a +50 difference was observed at both Bloomington and Muncie from the morning of the **29th** through late day on the **30th**, with Muncie's change occurring in just over 30 hours. Many locations' highs were exactly one degree above the **5th**'s record warmth. Seasonable marks then followed the strong cold frontal passage early on the **31st**.

March 2022's above normal temperatures were in contrast to the slightly below normal readings recorded during February 2022, yet continued the trend from the very mild March 2021.

Site	March 2022 Average Temp	March 2022 Dep from Nml	Highest Temperature	Lowest Temperature
Indianapolis Int'l Airport	45.5	+3.1	78 on 30 th	13 on 12 th
Lafayette	42.8	+2.8	74 on 5 th , 17 th	12 on 12 th
Muncie	45.2	+3.5	78 on 30 th	16 on 12 th , 13 th
Terre Haute	45.2	+2.4	75 on 30 th	14 on 12 th
Bloomington	45.8	+2.5	76 on 5 th	14 on 12 th
Shelbyville	47.1	+3.8	79 on 30 th	17 on 12 th
Indianapolis Eagle Creek	45.8	+3.2	79 on 30 th	14 on 12 th

At Indianapolis, March 2022's daily average temperatures were above normal on 18 days, below normal on 10 days, and at normal on 3 days. It was the 28th warmest March for the Indianapolis Area since weather records began in 1871, placing it in the 81st percentile.

Precipitation

Following the release of the new 30-year climatological normals (1991-2020), March is now typically the fifth-wettest month across most of central Indiana, and serves as a rough mean of monthly precipitation – between the four distinctively wetter months (April-July which normally total 4.33"+ at Indianapolis) and the seven drier months (August-February, which all normally record less than 3.50" at Indianapolis). March is typically not as relatively wet across northern portions of the region, where Lafayette and Muncie's autumn months generally receive slightly

more precipitation. Normally around 2.75-3.75" of precipitation falls across central Indiana in March, which includes the usual north (drier) to south (wetter) gradient. However, March 2022's totals were above these normals, with **4.67"** falling at Indianapolis International Airport, **127% of normal**. This was actually only the fourth wettest March of the last six years at Indianapolis; elsewhere Indianapolis–Eagle Creek totaled the most March precipitation since 2008, Terre Haute the most since 2018, with other sites wetter in March 2020.

No organized precipitation fell in central Indiana until late on March 5th, which aided the recession of main stem **river flooding** that had continued since mid/late February. On the Wabash River, minor flooding ended on the 1st at Covington, on the 4th at Terre Haute and the 5th at Montezuma, the latter ending 16 days in flood; meanwhile flooding continued at all points further downstream, where the crest passed on the 2nd; 6 days of **moderate flooding** ended at Mount Carmel on the 3rd. Most White River points had fallen below flood before March began, with flooding ending at Edwardsport on the 1st; Petersburg and Hazleton then fell out of flood by the 7th, concluding ~16 days in flood at both sites. Flooding also ended on the East Fork of The White River's segment from Rivervale to Shoals during the 1st-3rd.

March 2022's first weekend then featured two nights with rain and embedded thunderstorms. First, on the late evening of the 5th to early morning on the 6th, brief heavy rains fell mainly along and north of I-70; then from the evening of the 6th through the morning of the 7th, widespread, long-duration moderate to heavy rains impacted nearly all of the region. The greatest 1-day totals were recorded through dawn on the 7th, with many locations along and south of I-70 observing **2.00-2.75"**, including **2.80"** near Unionville (Monroe Co.) and **2.33"** reported in Plainfield (Hendricks Co.); while Tipton 5 SW reported **1.82"** with road flooding. Following additional, lighter scattered rains during daytime of the 7th, overall 2- to 3-day totals ranged from **1.25"** near Lafayette to **1.75-3.00"** across most of the region, including **2.95"** in Flat Rock (Bartholomew Co.) and **2.94"** in Augusta (Marion Co.) Flooding of low-lying areas was common from the morning of the 7th through the 8th, especially in and near the Indianapolis metro area.

River flooding also resumed on the 7th-8th at several sites along the three main stem rivers: essentially all of the Wabash re-entered flood, while the White flooded at Muncie and below, and the East Fork of the White at Shelbyville to Williams. Over a dozen site specific points on other rivers also flooded for a day or so, generally through the 8th. Most crests occurred on the 8th-10th with several locations entering a moderate flood stage: the East Fork at Seymour for 17 hours through the 8th daytime and evening; Young's Creek at Amity for 13 hours on the 8th, and the Mississinewa River at Ridgeville for just over a day through dawn on the 8th. Thereafter, lack of any substantial rain through the morning of the 18th promoted receding waters. The East Fork of the White sites above Seymour only flooded for 1-3 days, while Seymour and Rivervale saw another 4 days in flood, with Rivervale's later period ending on the 14th. The White's flood had a similar pattern, with most segments above Elliston flooding 3 days or less, while downstream points stayed in minor flood for roughly a week, with 10 days of flooding ending at Petersburg on the 17th. The Wabash was the slowest to recede, with this additional week or so of minor flooding from Covington to Terre Haute ending around the 14th; as flooding uninterrupted since February finally ended downriver, from the 16th at Vincennes to the 18th at Mount Carmel. This concluded 27 days in flood at Mount Carmel, and just over 28 days at Riverton.

Rain returning to the area on the **18th**, with mainly afternoon showers quickly leading to evening thunderstorms, which lingered into early on the **19th** across northern counties. 1-day rainfall totals through dawn on the **19th** were generally 0.50-**1.00** inches, with greatest reports including **1.48"** north of Anderson (Madison Co.) and **1.30"** south of Noblesville (Hamilton Co.). Additional light to moderate rain showers then fell near and north of I-70, mainly on the morning of the **19th**. 2-day rainfall totals were as high as **1.67"** north of Spencer (Owen Co.).

A broad, deep upper trough brought generally damp and unsettled weather across the region from pre-dawn on the **22nd** through the **25th**. Widespread soaking rains started this period, with 0.50-0.75" across most southern counties by dawn on the **22nd**; followed by impressive 1-day totals of mainly 0.75-**1.75"** through dawn on the **23rd**, with local maximums along the I-69 corridor including **2.12"** in Clermont (Marion Co.) and **2.11"** southeast of Bloomfield (Greene Co.). This brought storm totals of **1.50-2.50"** over a broad area across central parts of the region, with several reports of **2.50-2.85"** along and immediately west of I-69 over Greene County and southwestern Morgan County...while more modest storm totals near 1.00" were found along eastern and northwestern zones. The daytime of the **23rd** then found scattered strong afternoon storms across eastern counties as the system's cold front crossed the region, bringing additional rains up to 0.58" in Randolph County. Further rainfall on the **24th-25th** was light, yet 4-day final storm totals included a **2.00-3.00"** SSW-NNE maximum swath from Daviess County to Tipton County, with **3.37"** at Ellettsville (Monroe Co.), **2.46"** in Avon (Hendricks Co.), and **2.25"** near Washington; most locations outside this band totaled **1.20-2.00"**.

Following the rains of the **18th-22nd**, the seesaw of **river flooding** quickly resumed on mainly the **23rd**, with stages quickly rising into minor flood along all of the Wabash from Lafayette down to Riverton, the White from near Centerton (Morgan Co.) through all downriver points, and on the East Fork of the White at Seymour. This minor flooding crested on the White River from the **23rd** along Morgan and Owen Counties, to the **27th** at Edwardsport and the **29th** at Hazleton; on the East Fork at Seymour on the **24th**; and along the Wabash from Lafayette on the **23rd** to Riverton and points downriver on the **29th**. Minor flooding then ended on the East Fork at Seymour on the **25th**; the White River from Centerton on the **24th**, to Elliston on the **28th**, to Knox County sites on the **29th-31st**; and on the Wabash from Lafayette on the **28th** to Terre Haute on the **30th**, while flooding continued into April at Riverton and Mount Carmel.

The **30th** saw light morning showers lead to stronger afternoon/evening rains over western counties as a strong cold front approached Indiana. While the system's rain underperformed due to a very dry lower atmosphere, significant totals were nonetheless reported along most of the Wabash Valley. The Pence 1 SW (Warren Co.) COOP site reported **1.66"** while the Perrysville 4 WNW (Vermillion Co.) station measured **1.25"**.

The minor flooding back-and-forth cycle switched on yet again along the middle Wabash, with both Montezuma and Terre Haute, after a 1-day lull, re-entering flood on the **31st**. Flooding continued for these points as the month ended.

Limited **winter weather** was led by scattered light accumulating snowfall on both the **11th** and **26th**. The **11th**'s weak, two-part system brought many reports near 1.0" across northwestern and north-central counties, with this AM-hours portion totaling **1.6"** on the northeast side of Lafayette and **1.1"** at the Kokomo 3 WSW COOP site (Howard Co.); before afternoon and evening

snow dropped up to ~0.5" on several south-central counties. This second portion also contained a narrow band of heavier snow from Daviess County to Bartholomew County: while the Elnora (Daviess Co.) COOP station noted "snow not sticking", **1.8"** was reported east of Shoals. Two weeks after, the **26th**'s frozen precipitation started in the early morning as graupel/snow pellets across northern counties as colder air began to infiltrate the region; before pre-dawn snow squalls trained over a line from West Lafayette to south of New Castle (Henry Co.), which led to localized totals of **2.0-2.5"** on grassy surfaces in Lafayette, Frankfort (Clinton Co.), and Carmel. Daytime lake-enhanced snow showers then followed on the **26th** along and north of I-74, dropping an additional coating over a few northeast counties.

The month's only other winter weather was confined to isolated to scattered snow flurries on the **3rd** and **7th-9th**. Indianapolis only officially recorded a trace of frozen precipitation for the month, although 1-3" totals were common as close as the metro area's north side; for March, historically, Indianapolis records no measureable snowfall about once every 8 years.

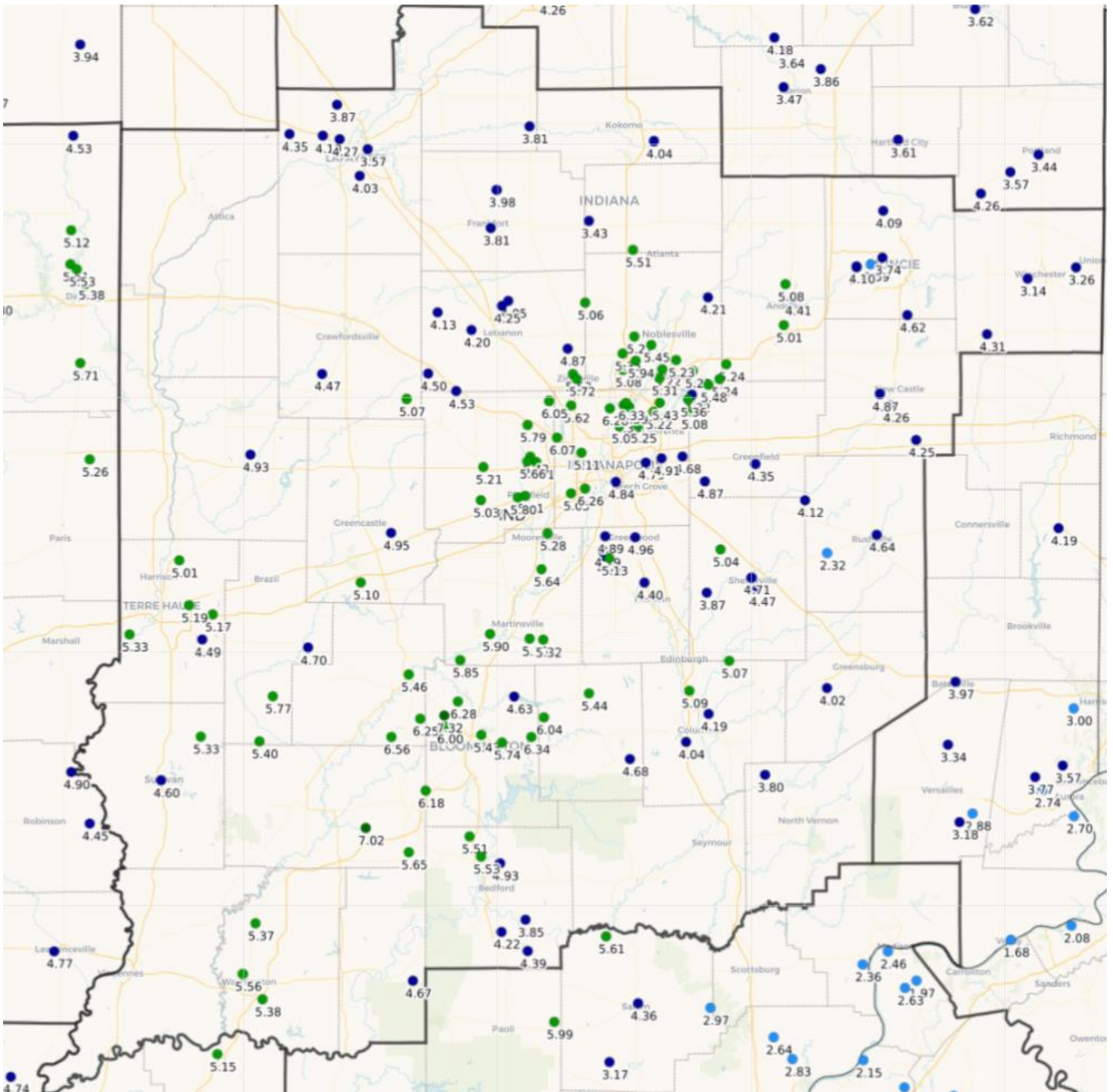
In summary, precipitation was most anomalous at Indianapolis-Eagle Creek, which recorded over **1.00"** on 3 days, with two 2-day totals both approaching **2.50"**: the **6th-7th's 2.38"** and the **22nd-23rd's 2.41"**. While not their daily maximums for the month, the **22nd** dropped **1.51"** on Bloomington, and **1.35"** at Terre Haute. Also noteworthy were Bloomington's 5 days of 0.50"+ and Terre Haute's 12 days with measureable precipitation. March 2022's above normal precipitation continued the pattern from February 2022's wet conditions, while furthering the trend from March 2021's near to above normal totals. March 2022 was the sixth of the last seven Marches (2016-2022) with a sum of 4.07" or more precipitation at Indianapolis. The year-to-date total at Indianapolis rose to **10.38"**, a surplus of **1.13"** above normal.

Site	March 2022 Precipitation	March 2022 Dep from Nml	Wettest Day	Longest Dry Stretch
Indianapolis Intl AP	4.67	+0.98	1.77 on 7 th	3 days, 3 rd -5 th , 8-10 th , 12-14 th
Lafayette (*)	2.66INC	M	M on 22 nd	6 days, 12 th -17 th
Muncie	3.47	+0.39	1.14 on 7 th	6 days, 12 th -17 th
Terre Haute	4.74	+1.82	1.44 on 7 th	3 days, 8-10 th , 26 th -28 th
Bloomington	5.79	+1.97	1.63 on 7 th	3 days, 3 rd -5 th , 8-10 th , 12-14 th , 26 th -28 th
Shelbyville	4.60	+1.15	1.75 on 7 th	3 days, 3 rd -5 th , 8 th -10 th
Indy - Eagle Creek	5.79	+2.60	1.90 on 7 th	5 days, 1 st -5 th , 13 th -17 th

(*) Lafayette's observed precipitation during 3/18-3/31 was incomplete

March 2022 was the **40th wettest** for the Indianapolis Area since weather records began in 1871, placing it in the 74th percentile.

March 2022 Total Precipitation, Through the Morning of 4/1/2022 As Reported By Central Indiana CoCoRaHS Observers



For the period 700 AM EST 3/1/2022 -to- 700 AM EDT 4/1/2022. Data is unofficial.

Totals were greatest (6.00-7.00"+) in and just west of Monroe County and the northern half of the Indy Metro. Minimum values (3.00-4.00") fell along central Indiana's periphery. The entire region was above normal.

Severe Weather

The severe season got off to an active start in early March with nocturnal thunderstorms on consecutive nights. Early on the **6th**, moist conditions beneath a southwesterly low-level jet stream produced two lines of thunderstorms over the region, with the second line containing damaging winds that impacted 11 northern counties, including siding ripped from houses in Hamilton County while porch pillars were blown off a house in Madison County. Early on the **7th**, more storms brought several brief local gusts to hurricane strength winds: a brief downburst in Merom (Sullivan Co.) estimated at 100 mph, blew over a recreational vehicle; a possible microburst in Trafalgar (Johnson Co.) estimated at ~80 mph, rolled an empty trailer several hundred yards; near Geneva (Shelby Co.) winds estimated at 95 mph snapped several telephone poles at ground level; and on the west side of Seymour (Jackson Co.) winds estimated at ~85 mph caused extensive damage. Less-intense winds led to reports of damage at both the Franklin WWTP (Johnson Co.) and Vincennes 5 NE COOP stations.

On the **23rd**, an approaching cold front set off a line of strong storms over eastern counties, with one cell reportedly dropping **1.25"** hail southwest of Greensburg (Decatur Co.).

Then on the evening of the **25th**, a passing strong cold front produced several strong storms, whose downdrafts brought a few marginally severe winds gusts as measured at both Indianapolis 1st-order airports as well as **59 mph** at the Kokomo Municipal Airport (Howard Co.).

Finally, on the overnight of the **30th-31st**, a deepening storm system passing to the northwest of the region produced marginally severe gradient winds, both before and after the associated cold frontal passage. A metal mobile porch awning near Mooreland (Henry Co.) was blown 100 yards, while several reports of downed trees and/or poles/lines were received from south of Interstate 70, namely within Jackson, Knox, Owen, Sullivan and Vigo Counties; severe gusts of **58-60 mph** were reported at Muncie, Terre Haute, and the Indianapolis Metro Airport in Fishers (Hamilton Co.). In addition to these gradient winds, during the evening of the **30th**, a cell in far southwestern Knox County exhibited rotation, although no severe weather was reported. No lightning was observed throughout this event.

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

Miscellaneous – Winds, Thunder, Fog & More

March 2022 was noteworthy for several days of very strong to marginally severe measured wind gusts; Indianapolis led the seven 1st-order airports with 6 such days, with peak gusts of 50-**58 mph** reported on the **5th**, **6th**, **22nd**, **25th**, **30th**, and **31st**. Severe gusts across the region included Indianapolis–Eagle Creek reaching **59 mph** on both the **6th** and **25th**, with Indianapolis Int'l

recording a **58 mph** peak gust on the **25th**; and Muncie registering **61 mph** late on the **30th**. Lafayette observed peak gusts of 56 and 54 mph on the **6th** and **25th**, respectively; while March ended like a lion at Terre Haute and Shelbyville, with gusts of 57 and 52 mph, respectfully, early on the **31st**.

Fog frequency ranged from 8 days at Muncie to 17 at Lafayette, while Indianapolis reported fog on 10 days. All of the 7 airports observed fog on the **11th**, **18th**, **19th**, **22nd**, and **25th**; with fog also common on the **6th**, **7th**, **23rd**, **24th**, **30th**, and **31st**; Lafayette recorded fog on all but one day during the **15th–26th**. Dense fog was rare, only being reported on the **17th** at Shelbyville and the **20th** at Lafayette.

Thunder frequency ranged from 2 days at Lafayette to 6 at Indianapolis. These occasional rumbles generally paralleled the several days of severe weather: with thunder reported at all 7 sites on the **6th** and **18th**, while also common on the **7th** and **23rd**, with Indianapolis and a few other sites additionally reporting thunder on the **22nd** and **25th**. No lightning was reported over the region throughout the passing system on the **30th–31st**.

On the **5th**, south-southwesterly gusts as high as 40 mph and record warmth led to minimum relative humidity values under 25% east of the Wabash Valley, with the Marion County sites dropping to **~15%**. This caused a 20-acre forest fire southwest of Nashville (Brown Co.). Five households were evacuated, with 12 volunteer fire departments on site to help extinguish the blaze. Very dry afternoons also occurred on the **14th** and **21st** with 1st-order sites east of the Wabash Valley again dropping below 25% relative humidity, with Marion County airports bottoming out in the 18-20% range both days. The **30th** found marginally-dry conditions across eastern counties with Shelbyville and Muncie's humidity falling in the early evening to 24% and 22%, respectively.

Bob McLain noted Castleton 2 S's lowest barometer reading for the month was 29.23" (**31st**).

April 2022 Outlook

The official outlook for April 2022 from the Climate Prediction Center indicates equal chances of above, below, or near normal temperatures for the region. The normal April temperature for Indianapolis is **53.6** degrees.

The outlook also indicates a slightly greater chance of above normal precipitation for central Indiana, especially north and east of Indianapolis. The normal April precipitation at Indianapolis is **4.34"**.

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

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