ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

May 2021

ILLINOIS WATER AND CLIMATE SUMMARY

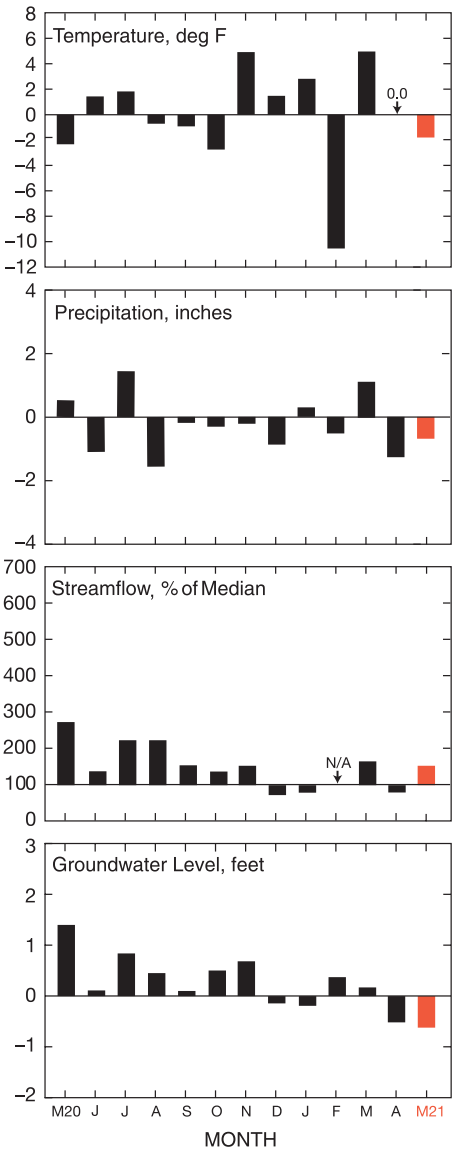

Figure 1. Statewide departures from normal.

MAY 2021 OVERVIEW

Temperatures and precipitation were below the long-term average in Illinois in May. Mean streamflow statewide was above the median for the month. Shallow groundwater levels were below the long-term depths.

Air temperatures statewide averaged 61.2°F in May, 2.0° below the long-term average (Figure 1). The southwest crop reporting district (CRD) was the warmest with an average of 64.1°F. The lowest regional average temperature was 59.0°F, reported by the northeast CRD. Departures from average ranged from 2.8° below average in the east-southeast CRD to 1.0° below average in the northeast CRD.

Precipitation statewide averaged 4.16 inches, 0.61 inches below the long-term average (Figure 1). The west CRD was the wettest with an average of 5.59 inches. The driest was the northeast CRD with an average of 2.85 inches. Departures from average ranged from 1.99 inches below average in the southwest CRD to 0.63 inches above average in the central CRD.

Soil moisture remained steady at depths from 2 inches to 5 feet in May. Moisture levels at 2 inches averaged 0.30 water fraction by volume (wfv) statewide at the end of the month.

Mean provisional streamflow aggregated statewide was above the long-term median flow for May, about 150% of median (Figure 1). Monthly mean discharge values ranged from normal to above normal for May in most areas of Illinois. The lower Illinois River crested near or above the local flood stages in the second part of May.

Water surface levels at the end of May were below the full pool or target level at 4 of 24 reporting reservoirs. At the end of May, Lake Shelbyville was 3.5 feet above the summer target level, Carlyle Lake was 1.4 feet above the summer target level, and Rend Lake was 3.1 feet above the spillway level. Lake Michigan's mean level was above its long-term mean for the month.

Shallow groundwater levels statewide were below the long-term average this month with an average departure of 0.58 feet below the period of record (Figure 1). Levels averaged 0.34 feet below April 2021 and 2.04 feet below May 2020 levels.

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Weather/Climate Information

— KEVIN GRADY

The following description of temperatures, modified growing degree days, precipitation, severe weather, and drought comes from data compiled by networks that report to the National Oceanic and Atmospheric Administration (NOAA). These data are provisional and may change slightly over time.

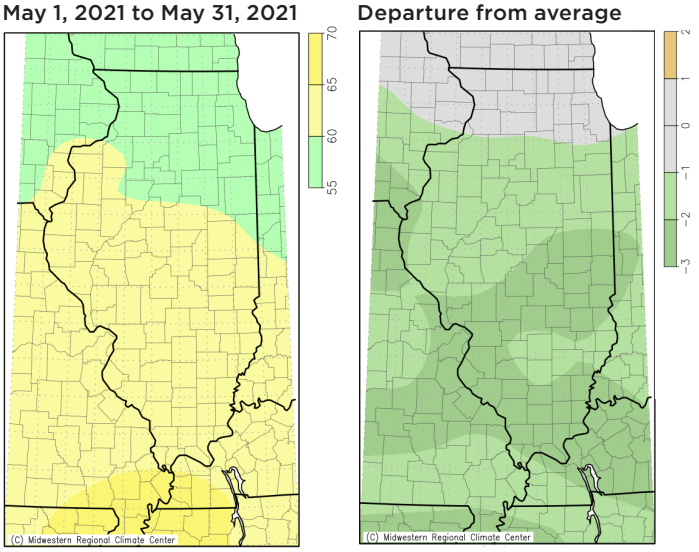
May in Illinois was cooler and drier than average across most of the state.

Temperatures averaged 61.2°F, 2.0° below the long-term statewide average for May (Table 1a, Figure 2a). Monthly average temperatures ranged from the upper 50s in northern Illinois to the mid-60s in southern Illinois. These temperatures were 1–3° below average across most of the state, with the larger departures generally in southern Illinois. After a warmer than average end to April, May began above average across the state as well, especially in northern Illinois where temperatures were over 10° above average in many places the first three days of the month. Temperatures then quickly fell below average and stayed there through the middle of the month. Between May 5 and 15, temperatures were generally 8–11° below average across most of Illinois. Nearly all stations reached their monthly minimum temperatures during this period, generally ranging from around 30° in northern Illinois to around 40° in southern Illinois. The coldest reading of the month, 26°F, was recorded at a station near Shabbona (DeKalb County) on May 8.

Following this cooler period, temperatures then warmed considerably across the state, with most areas to the north of I-70 8° or more above average between May 20 and 26. Northeastern Illinois was especially warm, with temperatures approaching 12° above average around Chicago during this period. Departures in southern Illinois were not quite as large, though they were still generally at least 5° above average. Most stations recorded their monthly maximum temperatures during this period, generally in the mid- to upper 80s with some reaching 90°. The warmest

AVERAGE TEMPERATURE (°F)

May 1, 2021 to May 31, 2021 | Departure from average



ACCUMULATED PRECIPITATION (IN)

May 1, 2021 to May 31, 2021 | Departure from average

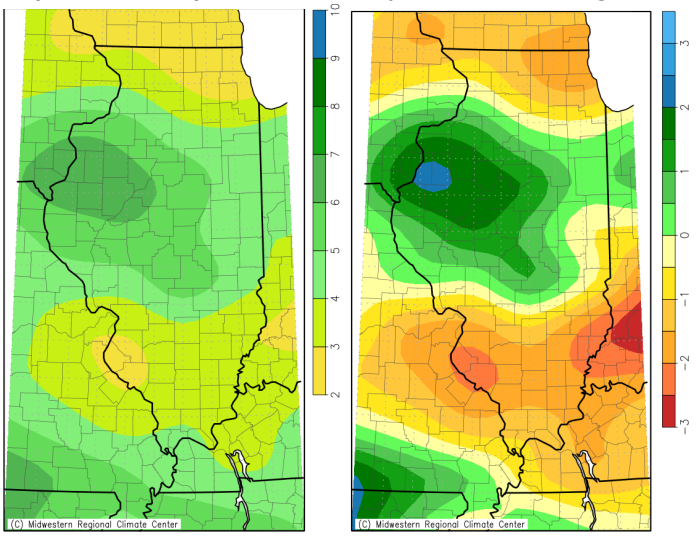


Figure 2a. Illinois temperature, precipitation, and their departures from average for May 2021. Source: cli-MATE, Midwestern Regional Climate Center. https://mrcc.illinois.edu/CLIMATE. Information accessed on June 8, 2021.

Table 1a. Temperature and Precipitation for May 2021

	Temp. (°F)	Departure from long-term avg. (1991–2020)	Precip. (in)	Departure from long-term avg. (1991–2020)
Illinois	61.2	-2.0	4.16	-0.61
CRD 1 (northwest)	59.6	-1.1	4.18	-0.43
CRD 2 (northeast)	59.0	-1.0	2.85	-1.70
CRD 3 (west)	61.0	-1.9	5.59	+0.57
CRD 4 (central)	61.0	-2.0	5.26	+0.63
CRD 5 (east)	60.4	-2.0	4.21	-0.28
CRD 6 (west southwest)	61.8	-2.6	4.44	-0.36
CRD 7 (east southeast)	61.6	-2.8	4.28	-0.51
CRD 8 (southwest)	64.1	-2.1	3.12	-1.99
CRD 9 (southeast)	63.6	-2.4	3.33	-1.71

Data from NOAA's National Centers for Environmental Information, accessed 6/8/2021.

Table 1b. Temperature and Precipitation for Spring (March-May) 2021

	Temp. (°F)	Departure from long-term avg. (1991–2020)	Precip. (in)	Departure from long-term avg. (1991–2020)
Illinois	53.3	+0.9	11.18	-0.76
CRD 1 (northwest)	50.6	+1.4	9.25	-1.50
CRD 2 (northeast)	50.6	+1.8	5.75	-4.84
CRD 3 (west)	52.8	+0.9	14.06	+2.62
CRD 4 (central)	52.8	+1.0	12.15	+1.06
CRD 5 (east)	52.2	+1.0	9.73	-1.18
CRD 6 (west southwest)	54.3	+0.5	12.88	+0.77
CRD 7 (east southeast)	54.2	+0.3	11.91	-0.89
CRD 8 (southwest)	56.9	+0.6	12.88	-1.23
CRD 9 (southeast)	56.4	+0.2	12.87	-1.61

Data from NOAA's National Centers for Environmental Information, accessed 6/8/2021.

reading of the month, 92°, was recorded at stations near Crystal Lake (McHenry County) and Joliet (Will County) on May 25. Finally, a cold front moved across Illinois near the end of the month, dropping temperatures to around 10° or more below average for most of the state for Memorial Day weekend.

Modified growing degree days (DD, base 50°, from April 1) ranged from around 500 DD in northern Illinois to just under 800 DD in far southern Illinois (Figure 2b). This was slightly above the long-term average in the northeastern corner of Illinois. Most of the rest of the state was below the long-term average, especially southern Illinois, which was up to 90 DD below average.

Precipitation averaged 4.16 inches in May, 0.61 inches below the long-term statewide average (Table 1a, Figure 2a). Similar to April, monthly totals were highest in west central Illinois, where May precipitation totals were commonly 5–7 inches, generally 1–2 inches above average. A station near Taylorville (Christian County) had the highest monthly total of 8.11 inches. Most of the rest of Illinois received well below average precipitation in May. Northeastern Illinois was notably very dry, especially the area around and to the north of Chicago. Monthly totals in this area were generally around 3 inches or less, 1–3 inches below average. Many stations in Lake, McHenry, and northern Cook Counties received less than 2 inches for May. O'Hare Airport recorded 1.79 inches for the month, 2.70 inches below average. Southern Illinois was also very dry, with most areas to the south of I-70 receiving less than 4 inches of precipitation in May, 1–2 inches below average in most places. East central Illinois was generally near to slightly below average for the month.

Severe weather reports: The NOAA Storm Prediction Center recorded 50 severe weather reports for May in Illinois: 14 for tornadoes, 17 for hail, and 19 for wind. (Multiple reports can be generated for a single event.) Many of these reports came during the first week of May as severe storms moved across central and southern Illinois. Nearly all the reports for the month were in the southern half of Illinois, along or to the south of the I-72 corridor.

For the spring season (March–May), 87 severe weather reports were recorded in Illinois: 18 for tornadoes, 23 for hail, and 46 for wind.

Drought: As May began, the United States Drought Monitor (USDM) depicted abnormally dry (D0) conditions or worse across much of eastern and northern Illinois. This included an area of moderate drought (D1) across much of northeastern Illinois, which had received below average precipitation since February. Precipitation in the first half of May helped improve soil moisture and streamflows in central and southern Illinois so that by mid-month only a few pockets of D0 conditions remained in east central Illinois and near the I-70 corridor. The southernmost part of the D1 drought area also received enough precipitation to improve to D0 early in the month. However, below average precipitation throughout most of May allowed the remaining D0 and D1 areas in northern Illinois to persist unchanged. Conditions also continued to deteriorate in the northeastern corner of the state, where spring (March–May) precipitation totals were 6–7 inches below average in some places (Figure 3). On both the May 18 and 25 maps, the USDM depicted parts of this area

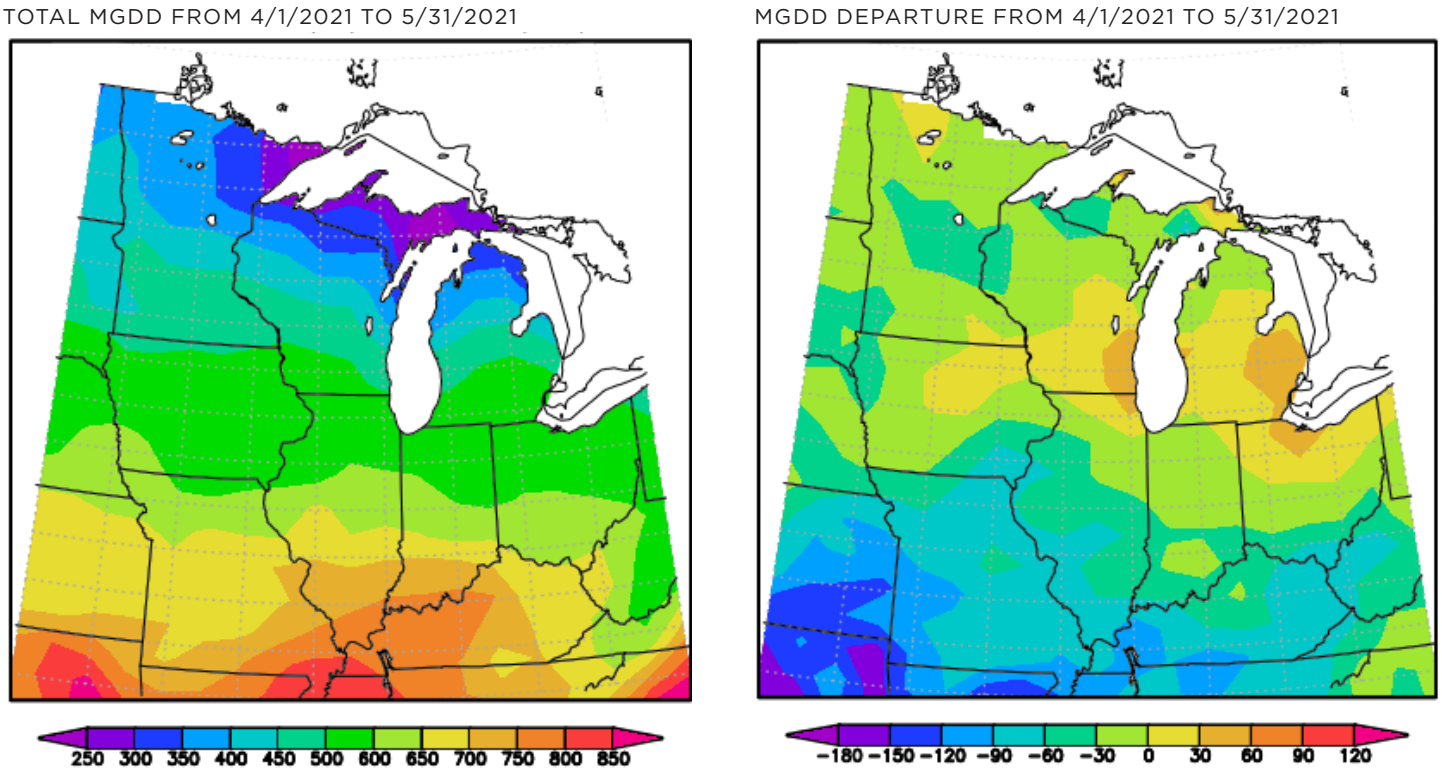


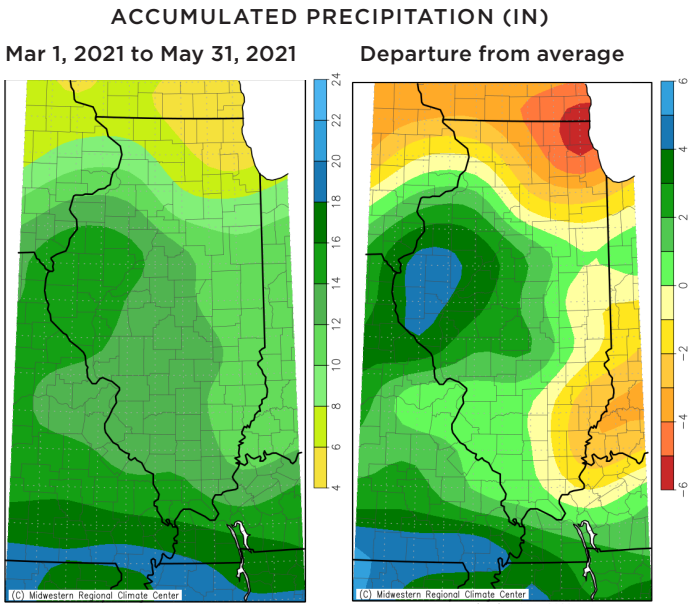
Figure 2b. Illinois modified growing degree days and departure from average through the end of May. Source: Midwestern Regional Climate Center. http://mrcc.illinois.edu, accessed on June 1, 2021.

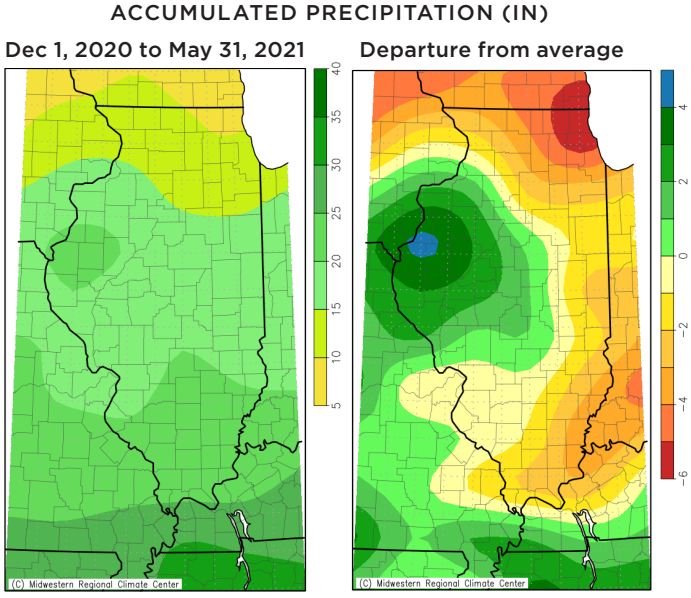
as experiencing severe drought (D2) conditions (Figure 4). Streamflows at many of the gauges in this area were below the 10th percentile for the time of year, and there were many reports of the drought conditions affecting area lawns and plants.

Spring (March-May) was overall slightly warmer than average across most of Illinois. Seasonal temperatures averaged 53.3°F, 0.9° above the long-term statewide average (Table 1b), ranging from the upper 40s in northern Illinois to the upper 50s in southern Illinois. Departures from average ranged from near average in southern Illinois to around 2° above average in northeastern Illinois. These above average seasonal temperatures were largely due to a much warmer than average March. Following a bitterly cold February, March 2021 tied March 2000 as the 11th warmest on record in Illinois (back to 1895) with temperatures 4.8° above the 1991–2020 average. Temperatures in both April and May fluctuated frequently between above and below average conditions, with most of the state being below average overall for both months. Most stations in Illinois also fell below freezing in late April at least once.

Spring precipitation averaged 11.18 inches statewide, 0.76 inches below average (Table 1b, Figure 3). Seasonal totals were generally highest in western and far southern Illinois, with totals of up to around 16 inches in some of these areas. The highest seasonal total was 17.90 inches, recorded at a station near Taylorville (Christian County). Western Illinois also had the largest departures from average, up to around 4 inches in some areas. This was in large part due to the area being wet in April and May while most of the rest of the state received below average precipitation for those months. Spring totals in eastern Illinois generally ranged between 9 and 12 inches, up to around 2 inches below average near the Indiana border. This area did receive above average precipitation in March, which helped remove some moderate drought (D1) in east central Illinois. Northern Illinois was consistently dry throughout spring, with some stations in northeastern Illinois reporting seasonal totals as low as 3 inches, 6–8 inches below average. O'Hare Airport recorded only 3.75 inches for the entire spring, 6.94 inches below average. These well below average totals led to the development of severe drought (D2) in the northeastern corner of Illinois by the middle of May.

Nearly all of Illinois received at least 0.1 inch of measurable snow during the spring. The largest seasonal totals of around 3 inches were recorded in northwestern Illinois, with higher amounts possible locally. The highest seasonal total was 6.0 inches, recorded at a station near East Dubuque (Jo Daviess County). Most of the spring snow came from two events, one on March 15–16 primarily in northern Illinois and another around April 20 across most areas south of I-80. However, much of Illinois received only up to about an inch of snow for the season, and totals were generally below average across the entire state by 1–4 inches.





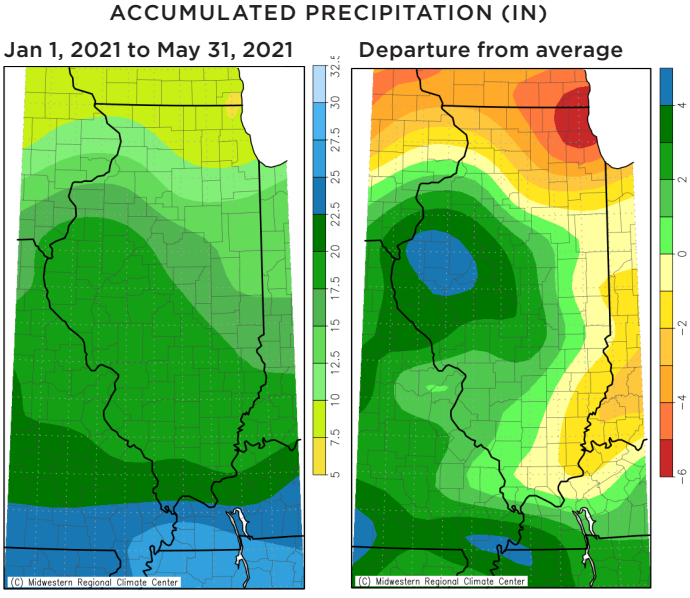
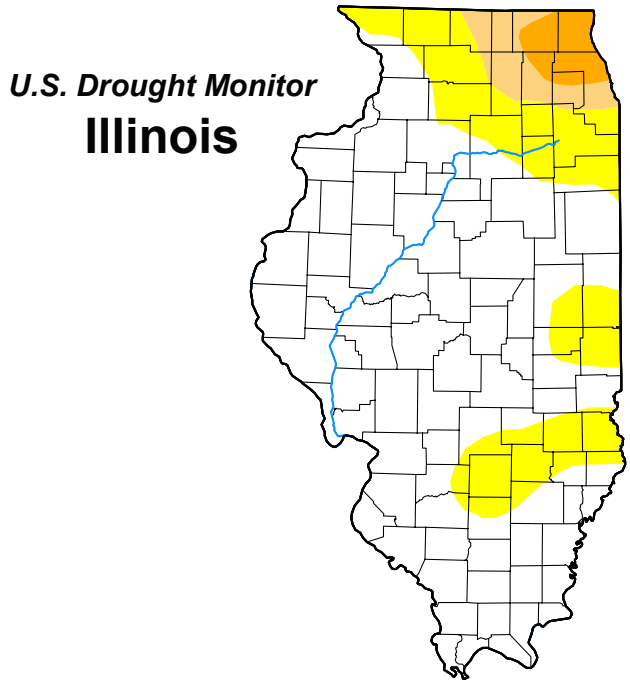


Figure 3. Illinois precipitation and precipitation departure from average for last 3 months (top left), last 6 months (bottom left) and year-to-date (bottom right). Source: cli-MATE, Midwestern Regional Climate Center. https://mrcc.illinois.edu/CLIMATE. Information accessed on June 8, 2021.



May 25, 2021

(Released Thursday, May. 27, 2021)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	73.51	19.91	3.73	2.85	0.00	0.00
Last Week *05-18-2021*	73.50	19.93	3.73	2.85	0.00	0.00
3 Months Ago *02-23-2021*	74.32	18.31	7.37	0.00	0.00	0.00
Start of Calendar Year *12-29-2020*	54.89	28.75	14.34	2.02	0.00	0.00
Start of Water Year *09-29-2020*	42.28	54.03	3.69	0.00	0.00	0.00
One Year Ago *05-26-2020*	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

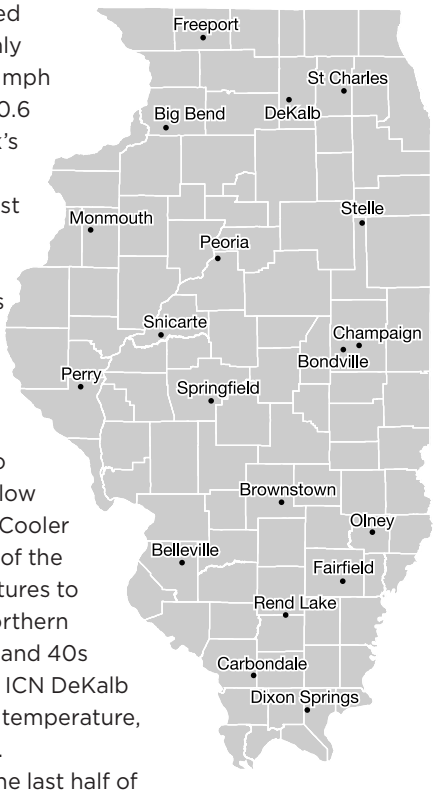
Adam Hartman
NOAA/NWS/NCEP/CPC

Figure 4. U.S. Drought Monitor report for Illinois. Source: U.S. Drought Monitor. Author: Adam Hartman, NOAA/NWS/NCEP/CPC https://droughtmonitor.unl.edu, accessed on June 8, 2021.

Illinois Climate Network (ICN)

— JENNIE ATKINS

The Illinois Climate Network (ICN) collects hourly weather and soil information from 19 stations across the state. ICN data for May are presented in Table 2.



Wind speeds declined again in May to a monthly average of 6.6 mph, 1.0 mph lower than in April and 0.6 mph below the network's long-term average. ICN Bondville had the highest monthly average at 10.5 mph. The highest recorded wind gust was 50.1 mph, measured at the DeKalb station on May 1.

Air temperatures rose 8°F from in April to an average of 61°, 2° below the long-term average. Cooler weather in the first half of the month caused temperatures to fall below freezing in northern Illinois and into the 30s and 40s for the rest of the state. ICN DeKalb had the month's lowest temperature, recording 26° on May 8.

Temperatures rose the last half of May as most stations reported temperatures into the mid- to high 80s. ICN St. Charles reported 91° on May 24, the month's highest temperature.

Soil temperatures rose 8 to 9°F in May to averages in the low to mid-60s. Under bare soil, temperatures ranged from 38 to 103° at 2-inch depths and 42 to 96° at 4 inches. Temperatures under sod ranged from 46 to 85° at 4 inches and 50 to 78° at 8 inches.

Precipitation averaged 4.18 inches for the month, 1.14 inches more than in April and 0.16 inches above the long-term average. The highest totals were recorded at the western stations. The Big Bend and Springfield stations both had monthly totals of more than 6 inches, while ICN Monmouth reported 7.27 inches, the month's highest.

Soil moisture at 2-inch depths had no significant overall changes in May. Levels averaged 0.30 water fraction by volume (wfv) across the network at the end of May, well above wilting points for the soils monitored. There were large changes in northern Illinois as increased rainfall caused soil moisture to rise 54% in the region to an average of 0.23 wfv. However, conditions in the region still remained drier in comparison to other parts of the state. Moisture levels remained steady at depths from 8 inches to 5 feet.

Table 2. Data from the Illinois Climate Network (ICN), May 2021

Station	Wind			Air Temperature (°F)			Total Solar Radiation (MJ/m²)
	Avg. Speed (mph)	Avg. Direction (°)	Max. Gust (mph)	Max.	Min.	Avg.	
Belleville	6.2	169.6	33.6	87.9	35.7	62.6	605.3
Big Bend	7.8	165.2	38.1	86.6	31.8	59.8	601.8
Bondville	10.5	157.7	40.6	87.7	32.8	60.9	617.6
Brownstown	5.1	159.0	30.8	89.2	37.8	63.4	602.7
Carbondale	5.6	176.4	34.1	88.1	36.0	63.2	625.1
Champaign	3.5	155.2	26.8	87.9	34.6	61.0	613.3
DeKalb	10.0	176.3	50.1	89.7	25.8	58.7	634.7
Dixon Springs	3.1	152.6	29.4	89.0	36.1	63.0	616.4
Fairfield	5.8	140.6	38.5	86.9	37.8	62.8	619.7
Freeport	5.0	178.9	39.7	87.9	31.8	59.0	607.3
Monmouth	10.4	170.6	41.6	86.5	34.8	60.4	604.1
Olney	4.7	137.8	48.7	87.9	36.6	62.7	625.9
Peoria	6.9	158.8	31.0	87.4	34.5	60.4	612.1
Perry	6.0	190.3	31.7	86.5	34.9	61.2	570.0
Rend Lake	4.6	161.3	29.8	89.8	40.9	63.5	617.5
Snicarte	9.2	167.2	40.5	88.7	35.5	62.3	601.1
Springfield	5.3	164.9	30.6	86.3	36.9	62.0	614.3
St. Charles	6.3	153.3	40.3	90.6	28.0	58.7	633.5
Stelle	9.3	163.5	41.7	88.7	30.7	59.2	599.2

Table 2. continued

Station	Average Relative Humidity (%)	Total Precip. (in)	Average Dew Point (°F)	Total Potential Evapotranspiration (in)	Average Soil Temperature (°F) at			
					4" under Sod	8" under Sod	4" under Bare Soil	2" under Bare Soil
Belleville	71.0	2.83	51.8	4.88	63.3	63.2	64.8	65.4
Big Bend	72.1	6.04	49.3	4.65	63.9	62.5	64.3	63.8
Bondville	71.0	3.02	50.0	4.93	61.0	60.2	63.8	64.0
Brownstown	73.5	4.16	53.8	4.70	63.1	61.8	63.9	64.1
Carbondale	80.3	4.00	55.9	4.80	66.3	63.5	65.4	66.2
Champaign	71.5	3.35	50.5	4.62	65.4	64.4	66.2	66.8
DeKalb	69.2	3.39	47.2	5.01	58.9	57.6	60.0	60.8
Dixon Springs	75.3	4.19	54.0	4.75	66.5	66.0	66.6	69.4
Fairfield	72.8	2.33	52.9	4.80	63.1	62.6	65.0	67.1
Freeport	69.0	2.34	47.4	4.62	61.3	59.5	62.8	64.0
Monmouth	72.9	7.27	50.4	4.65	60.3	58.5	62.5	62.3
Olney	71.2	2.85	52.1	4.86	65.1	64.4	65.7	67.3
Peoria	70.5	5.96	49.6	4.72	61.8	60.6	61.8	62.5
Perry	72.0	5.25	50.9	4.45	63.1	62.0	63.6	64.8
Rend Lake	71.6	4.12	53.3	4.91	63.8	62.8	68.6	67.6
Snicarte	70.4	5.20	51.1	4.90	66.0	65.4	67.7	68.9
Springfield	69.1	6.06	50.5	4.76	64.1	62.4	64.5	66.3
St. Charles	68.2	2.63	46.8	4.91	61.7	59.0	64.5	64.0
Stelle	71.0	4.40	48.7	4.70	61.8	60.2	62.8	62.4

M = Missing data.

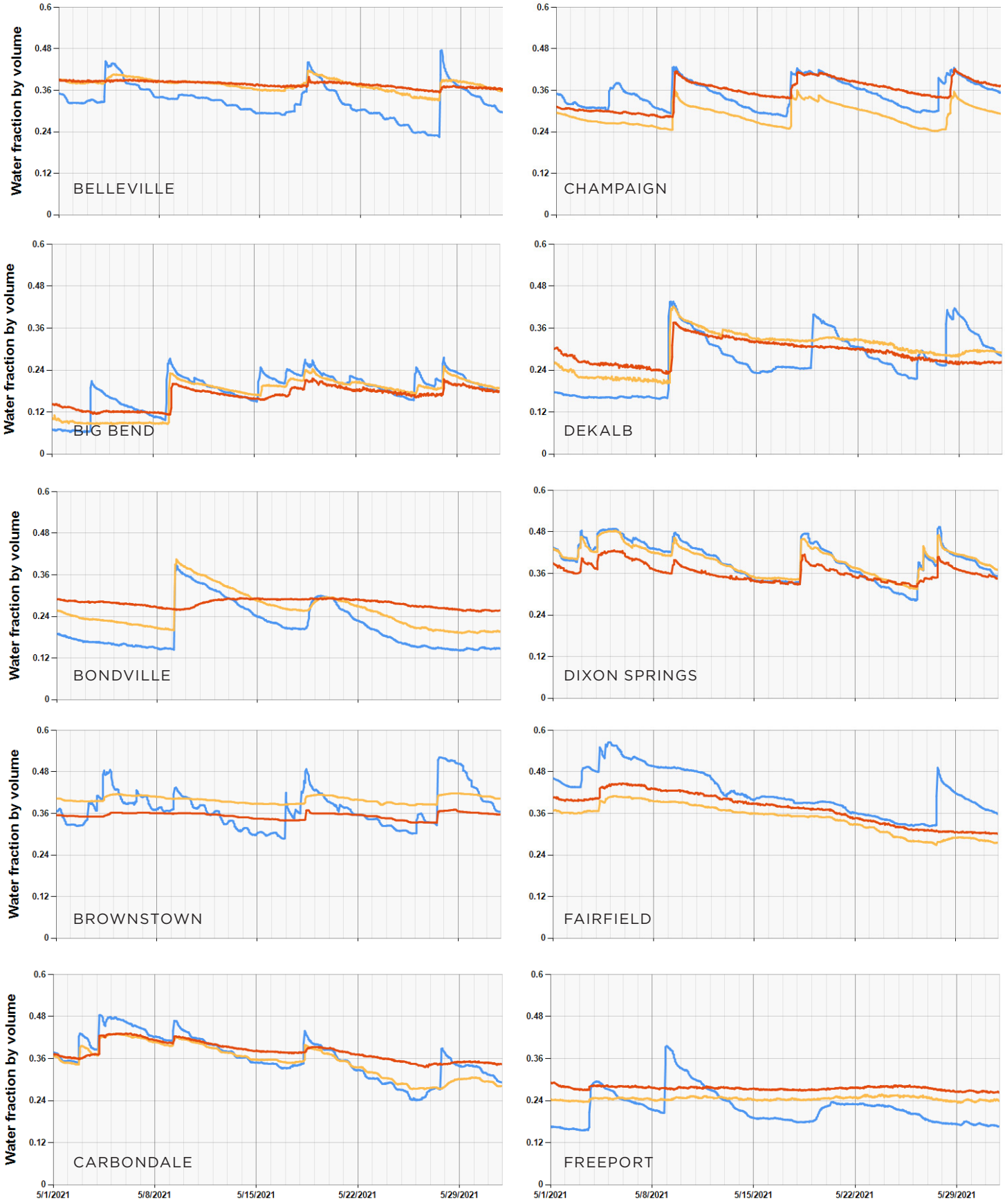


Figure 5. May soil moisture levels at ICN stations: 2 in, 4 in, and 8 in

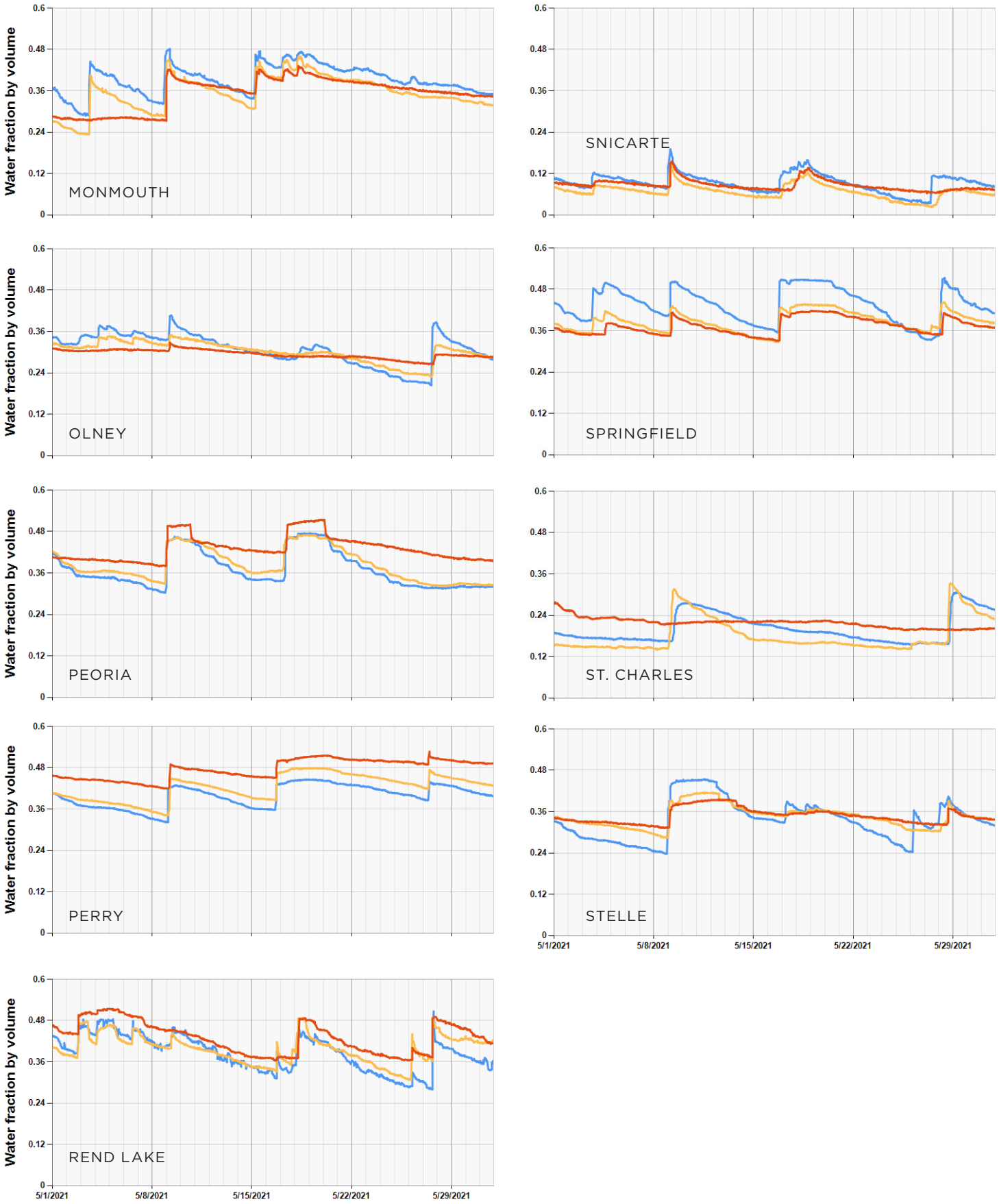


Figure 5. May soil moisture levels at ICN stations: 2 in, 4 in, and 8 in

Surface Water Information

— BILL SAYLOR

River and stream discharge and stage data are obtained from gaging stations operated by the U.S. Geological Survey (USGS) or the U.S. Army Corps of Engineers (USACE). The USGS gaging station network is supported, in part, by the Illinois Department of Natural Resources Office of Water Resources, the Illinois State Water Survey (ISWS), and the USACE. Provisional discharge data are obtained from the USGS.

Table 3 lists the provisional peak stage for the current month compared to flood stage at selected streamgaging stations located on the Illinois, Mississippi, and Ohio Rivers. Peak stage is represented here by morning readings posted daily by the USACE or the National Weather Service. Flood stage is defined locally for each gage location.

The lower Illinois River crested near or above the local flood stages in the second part of May.

Provisional monthly mean flows for this month for 26 streamgaging stations located throughout Illinois are shown in Table 4, compared to statistics of past record of monthly mean flows at those stations for the same month. Both recent and long-term data are retrieved from USGS online data services following the end of the month. Years of record values in Table 4 represent the number of past monthly values included in the Table 4 statistics; at some stations, the available record may not be continuous. Additional source data may be available from USGS.

The statewide percent of historical mean flow and percent of historical median flow are calculated by dividing the sum of the average flows this month at stations in Table 4 by the sum of the historical mean and median flows calculated for the month, respectively, at the same stations. This method is intended to weight individual observations proportionately in the aggregate comparison. (The Illinois River and Rock River stations are excluded from the statewide calculation because other rivers listed in Table 4 contribute to their flow.)

Mean provisional flow aggregated statewide, using the available monthly mean data shown this month in Table 4, was above the median value for May (approximately 150 percent of the median) and slightly above the mean for May (approximately 105 percent of the mean). Monthly mean discharge values in May ranged mainly from normal to above normal for the month. Monthly mean streamflow of the Fox River at Dayton in northeastern Illinois was below normal for May.

Water-Supply Lakes and Major Reservoirs. Table 5 lists reservoirs in Illinois, their normal pool or target water surface elevation, and other data related to observed variations in water surface elevations. Reservoir levels are obtained from a network of cooperating reservoir operators who are contacted each month by ISWS staff for the current water levels. Reservoir levels are reported in terms of their difference from normal pool (or target level). The average of the month-end readings for the period of record is reported in terms of the difference from normal pool or target level (column 6 of Table 5), and the number of years of record for each reservoir also is given (column 7). Most reservoirs serve as public water supplies, with the exceptions noted in the last column.

Compared to end-of-April water levels at 24 reservoirs for which levels were reported last month and this month, reported end-of-May water levels were lower at 7 reservoirs, higher at 7 reservoirs, and about the same as at the end of April at 10 reservoirs. For the 24 reservoirs with measurements reported at the end of May, water levels were below normal target pool or spillway level at 4 reservoirs, above normal target pool or spillway level at 17 reservoirs, and at about full pool level at 3 reservoirs.

Major Reservoirs. Compared to water levels at the end of April, at the end of May the water level at Lake Shelbyville was 6.4 feet higher, Carlyle Lake was 2.4 feet higher, and Rend Lake was 0.8 feet lower. (Seasonal target levels of Lake Shelbyville and Carlyle Lake increase from March to May.) At the end of May, Lake Shelbyville was 3.5 feet above the summer target level, Carlyle Lake was 1.4 feet above the summer target level, and Rend Lake was 3.1 feet above the spillway level.

Great Lakes. Current month mean and end-of-month values are provisional and are relative to International Great Lakes Datum 1985. The May 2021 mean level for Lake Michigan was 580.5 feet. The monthly mean level one year ago (May 2020) was 582.0 feet. The long-term average lake level for May is 579.1 feet, based on 1918–2020 data. In this period of record, the lowest mean level for Lake Michigan for May occurred in 1964 at 576.6 feet, and the highest mean level for May occurred in 2020 at 582.0 feet. The month-end level of Lake Michigan was 580.5 feet. All values are provided by the U.S. Army Corps of Engineers Detroit District.

Table 3. Peak Stages for Major Rivers during May 2021

River	Station	River mile*	Flood stage (feet)*	Peak stage (feet)**	Date
Illinois	Morris	263.1	16	11.4	11
	La Salle	224.7	20	19.8	11
	Peoria	164.6	18	15.0	14-15
	Havana	119.6	14	16.3	23
	Beardstown	88.6	14	17.7	24
	Hardin	21.5	25	24.9	20-21
Mississippi	Dubuque	579.9	17	10.6	01
	Keokuk	364.2	16	8.7	11
	Quincy	327.9	19	12.9	10
	Grafton	218.0	18	17.1	20
	St. Louis	180.0	30	23.8	21
	Chester	109.9	27	25.6	21
	Thebes	43.7	33	28.6	22
Ohio	Cairo	2.0	40	36.1	10

Notes:
* River mile and flood stage from *River Stages in Illinois: Flood and Damage Data*, Illinois Department of Natural Resources, Office of Water Resources, August 2004 (and Addendum, February 2007), and from the National Weather Service.
**Peak stage based on daily a.m. readings, not instantaneous peak. Stage data obtained from U.S. Army Corps of Engineers.

Table 4. Provisional Mean Flows, May 2021

Station	Drainage area (sq mi)	Years of record*	2021 mean flow (cfs)	Long-term flows*		Flow condition	Percent chance of exceedence	Days of data this month
				Mean (cfs)	Median (cfs)			
Rock River at Rockton	6,363	81	4,838	6,009	5,306	normal	53	31
Rock River near Joslin	9,549	81	7,180	9,558	8,369	normal	64	31
Pecatonica River at Freeport	1,326	106	1,106	1,104	888	normal	38	31
Green River near Geneseo	1,003	85	1,265	1,110	904	normal	36	31
Edwards River near New Boston	445	86	806	581	403	above normal	28	31
Kankakee River at Momence	2,294	108	2,484	2,995	2,897	normal	57	31
Iroquois River near Chebanse	2,091	97	3,820	2,800	2,229	above normal	24	31
Fox River at Dayton	2,642	106	1,490	2,799	2,364	below normal	70	31
Vermilion River at Pontiac	579	78	770	803	590	normal	38	31
Spoon River at Seville	1,636	106	4,323	1,963	1,332	above normal	12	31
LaMoine River at Ripley	1,293	100	3,147	1,569	868	above normal	16	31
Bear Creek near Marceline	349	77	651	438	200	above normal	23	31
Mackinaw River near Congerville	767	76	1,191	997	805	normal	31	31
Salt Creek near Greenview	1,804	79	2,366	2,510	1,941	normal	41	31
Sangamon River at Monticello	550	111	710	740	518	normal	38	31
South Fork Sangamon near Rochester	867	71	2,102	1,162	700	above normal	19	31
Illinois River at Valley City	26,743	82	41,700	38,549	34,965	normal	38	27
Macoupin Creek near Kane	868	93	1,839	1,037	475	above normal	18	31
Vermilion River near Danville	1,290	99	1,649	1,747	1,284	normal	41	31
Kaskaskia River at Vandalia	1,940	51	1,480	2,122	1,585	normal	57	29
Shoal Creek near Breese	735	78	738	969	649	normal	44	31
Embarras River at Ste. Marie	1,516	109	1,702	2,038	1,272	normal	41	31
Skillet Fork at Wayne City	464	103	251	677	339	normal	55	31
Little Wabash River below Clay City	1,131	106	871	1,541	811	normal	48	31
Big Muddy River at Plumfield	794	50	956	1,535	1,005	normal	52	31
Cache River at Forman	244	98	470	458	328	normal	35	31

Notes:
Source streamflow data are obtained from the U.S. Geological Survey.
N/A = not available (e.g., due to ice or equipment problems).

Much below normal flow = 90-100% chance of exceedance.
Below normal flow = 70-90% chance of exceedance.
Normal flow = 30-70% chance of exceedance.
Above normal flow = 10-30% chance of exceedance.
Much above normal flow = 0-10% chance of exceedance.
***As calculated from past monthly mean flow values retrieved from U.S. Geological Survey (USGS) data services this month.**

Table 5. Reservoir Levels in Illinois, May 2021

Reservoir	County	Normal pool or target level (feet)	Current level difference from normal or target)	Monthly change (feet)	Average difference from normal or target (feet)	Years of record	April reported pumpage (million gallons)
Altamont	Effingham	582.0	–0.1	0.0	–0.6	37	6.1
Bloomington	McLean	719.5	+0.2	+0.2	–0.4	34	N/A
Carlinville	Macoupin	571.1	–0.2	–0.3	0.0	35	22.7
Carlyle[1]	Clinton	445.0	+1.4	+2.4	+2.3	43	N/A
Decatur[1,3]	Macon	614.3	+0.1	–0.1	–0.1	37	1,019.9
Evergreen[4]	Woodford	720.0	+0.1	0.0	–0.8	30	N/A
Glenn Shoals[2]	Montgomery	590.0	0.0	–1.0	+0.1	27	w/Hillsboro
Highland	Madison	500.0	+0.3	–0.1	+0.1	32	29.2
Hillsboro[2]	Montgomery	589.0	N/A	N/A	0.0	25	32.8
Jacksonville[2]	Morgan	644.0	N/A	N/A	–0.1	20	w/Mauvaise Terre
Kinkaid	Jackson	420.0	+0.1	–0.2	+0.2	32	46.9
Lake of Egypt	Williamson	500.0	+0.3	0.0	0.0	27	N/A
Mattoon	Coles	632.0	0.0	0.0	–0.1	27	w/Paradise
Mauvaise Terre[2]	Morgan	588.5	N/A	N/A	+0.1	22	no meter
Mt. Olive (new)	Macoupin	600.0	N/A	N/A	–0.4	14	w/Mt. Olive (old)
Mt. Olive (old)	Macoupin	654.0	–0.2	–0.2	–0.3	24	4.1
Pana	Christian	641.6	+0.1	0.0	–0.3	37	N/A
Paradise	Coles	685.0	+0.1	0.0	–0.1	31	56.8
Paris (east)[5]	Edgar	660.0	+0.3	+0.1	+0.1	11	Not PWS
Paris (west)[5]	Edgar	660.1	+0.3	+0.1	+0.1	11	w/Paris (east)
Raccoon[1,5]	Marion	477.0	+0.7	0.0	+0.3	13	87.7
Rend	Franklin	405.0	+3.1	–0.8	+3.3	43	N/A
Salem[3]	Marion	546.5	–0.1	+0.1	–0.6	26	23.3
Shelbyville[1]	Shelby	599.7	+3.5	+6.4	+3.9	43	Not PWS
Sparta[3]	Randolph	497.0	N/A	N/A	–0.7	23	N/A
Spring[3,4]	McDonough	654.0	+0.1	0.0	+0.1	37	42.0
Springfield[1,3]	Sangamon	560.0	+0.5	0.0	+0.1	37	548.4
Taylorville	Christian	590.0	+0.2	+0.3	+0.1	28	46.1
Vermilion[4]	Vermilion	581.7	0.0	0.0	–0.1	36	185.9

Notes:
Normal pool and target level datum is NGVD 1929.
Current levels reported represent water surface levels at the end of the month, not the monthly average.
Average difference from normal or target level is the arithmetic average of reported month-end values for the period of record indicated.
Years of record = total number of monthly readings included in month-end average. Total period of record may be longer.
Not PWS = not a public water supply.
N/A = not available.
(1) Target operating level may vary. Seasonal target levels this month represent June 1 values.
(2) Instrumentation not available to measure height of water elevation above spillway.
(3) Natural inflow can be supplemented by other sources.
(4) Normal pool elevations have changed during period of record reported.
(5) Years of record and average since supply switched to different source. Period of reporting is longer.

Groundwater Information

— JENNIE ATKINS

Comparison to Period of Record. Shallow groundwater levels in 26 observation wells were below the long-term average for May. Levels were 0.58 feet below average and ranged from 5.13 feet below to 1.91 feet above normal levels (Table 6).

Comparison to April 2021. Shallow groundwater levels were slightly below those of the previous month. Levels averaged 0.34 feet below and ranged from 2.41 feet below to 1.05 feet above April 2021 levels.

Comparison to May 2020. Shallow groundwater levels in May were below levels from one year ago. Levels averaged 2.04 feet below and ranged from 13.03 feet below to 1.28 feet above May 2020 levels.

Table 6. Month-End Shallow Groundwater Level Data Sites, May 2021

Well name	County	Well depth (feet)	This month's reading (depth to water, feet)	Deviation from 15-year avg. level (feet)	Deviation from Period of record avg. (feet)	Deviation from Previous month (feet)	Deviation from Previous year (feet)
Belleville	St Clair	15.00	3.56	–1.38	–1.28	–1.26	–1.94
Bondville	Champaign	21.00	5.56	–1.25	–1.89	0.17	N/A
Bondville (ICN)	Champaign	20.00	4.39	–1.05	–0.93	–0.44	–1.98
Boyleston	Wayne	23.00	N/A	N/A	N/A	N/A	N/A
Brownstown	Fayette	15.00	1.12	0.25	0.36	0.23	–0.61
Carbondale	Jackson	26.00	4.49	–1.14	–1.20	–0.52	–0.49
Coffman	Pike	28.00	N/A	N/A	N/A	N/A	N/A
Crystal Lake	McHenry	18.00	4.53	–1.26	–0.53	–0.80	–1.69
DeKalb	DeKalb	25.00	4.22	–2.14	–2.14	–1.05	–2.41
Fairfield	Wayne	21.00	4.25	–1.33	–1.26	–1.53	–2.82
Fermi Lab	DuPage	15.00	8.05	–2.9	–2.58	–0.18	–4.32
Freeport	Stephenson	26.00	16.35	–1.62	–1.28	–2.41	–3.54
Galena	JoDaviess	25.00	20.4	–1.38	–0.04	0.33	–2.19
Good Hope	McDonough	30.00	3.52	0.88	1.84	0.71	0.76
Greenfield	Greene	22.00	7.21	0.83	1.09	0.05	–0.62
Janesville	Coles	11.00	5.28	–0.07	0.03	0.14	–0.49
Monmouth	Warren	27.00	8.47	–0.12	–0.03	0.49	–0.04
Mt. Morris	Ogle	55.00	17.45	–3.43	–1.06	–0.6	–6.48
Olney	Richland	19.00	3.86	–1.48	–1.41	–0.32	–2.56
Perry	Pike	20.00	2.26	1.30	1.91	0.64	–0.38
Rend Lake	Jefferson	21.00	1.94	1.26	1.37	–0.37	–0.80
SE College	Saline	11.00	3.13	0.69	0.63	0.66	0.51
Snicarte	Mason	42.00	37.95	–0.56	–1.51	–0.79	1.28
Sparta	Randolph	27.00	6.57	–2.45	–1.29	–1.24	–4.05
Springfield	Sangamon	20.00	2.95	0.59	0.75	0.22	–1.27
St. Charles	Kane	21.00	25.96	–6.42	–5.13	–0.92	–13.03
St. Peter	Fayette	15.00	2.01	–0.11	0.56	1.05	0.09
SWS #2	St. Clair	80.00	13.26	–1.68	–0.05	–1.11	–1.85
				–1.00	**–0.58**	**–0.34**	**–2.04**

Notes: N/A = Data not available.

Data sources for this publication include the following:
CPC - Climate Prediction Center, https://www.cpc.ncep.noaa.gov/index.php
ISWS - Illinois State Water Survey, https://www.isws.illinois.edu
MRCC - Midwestern Regional Climate Center, https://mrcc.illinois.edu
NCEI - National Centers for Environmental Information, https://www.ncei.noaa.gov
NWS - National Weather Service, https://www.nws.noaa.gov
SPC - Storm Prediction Center, https://www.spc.noaa.gov
USACE - U.S. Army Corps of Engineers, http://rivergages.com, https://www.lre.usace.army.mil
USDM - U.S. Drought Monitor, https://droughtmonitor.unl.edu
USGS - U.S. Geological Survey, https://waterdata.usgs.gov/il/nwis
WARM - Water and Atmospheric Resources Monitoring Program, https://www.isws.illinois.edu/warm

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