ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

October 2020

ILLINOIS WATER AND CLIMATE SUMMARY

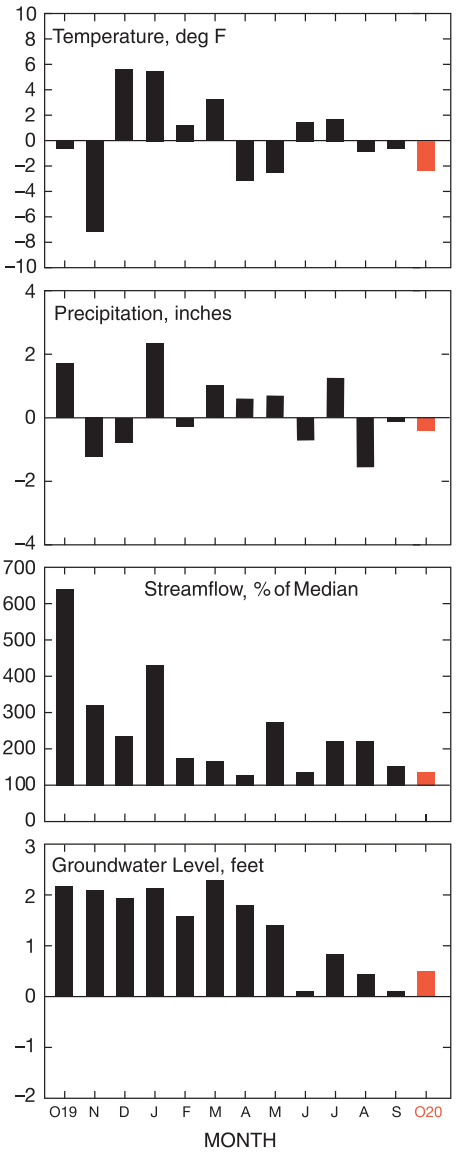

Figure 1. Statewide departures from normal.

OCTOBER 2020 OVERVIEW

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

Air temperatures averaged 52.1°F in October, 2.3° below the long-term average (Figure 1). The southeast crop reporting district (CRD) was the warmest with an average of 55.8°F. The lowest regional temperature was 48.5°F, reported by the northwest CRD.

Precipitation averaged 2.93 inches, 0.31 inches below the long-term average (Figure 1). The southeast CRD was the wettest with an average of 5.78 inches. The driest was the west CRD with 1.33 inches.

Soil moisture at depths to 4 inches increased throughout the state in October. Declines occurred in central Illinois at depths of 20 inches and greater, while levels increased in the south.

Mean provisional streamflow aggregated statewide was above the long-term median flow for October, about 130% of median (Figure 1). Monthly mean discharge values ranged mostly from below normal to above normal for October.

Water surface levels at the end of October were below the full pool or target level at 15 of 24 reporting reservoirs. At the end of October, Lake Shelbyville was 0.1 foot above the seasonal target level, Carlyle Lake was 0.5 feet above the seasonal target level, and Rend Lake was 0.2 feet above the spillway level. Lake Michigan's mean level was above its long-term mean for the month.

Shallow groundwater levels statewide were above the long-term average this month with an average departure of 0.49 feet from the period of record (Figure 1). An increase of 0.35 feet in departures was observed from the deviation in normal groundwater levels between September and October. Levels averaged 0.13 feet above September 2020 and 1.89 feet below October 2019 levels.

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Weather/Climate Information

— KEVIN GRADY

The following description of temperatures, growing degree days, precipitation, snow, 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.

October was drier than average in northern Illinois, wetter than average in southern Illinois, and cooler than average across the state.

Temperatures averaged 52.1°F, 2.3° below the long-term average (Table 1, Figure 2a). Monthly average temperatures ranged from the upper 40s in northern Illinois to the mid-50s in southern Illinois. These temperatures were below average across the state, with departures ranging from around 1.5° below average in southeastern Illinois to up to 4° below average in parts of western and northern Illinois.

Following a cooler than average September, October started cooler as well, with average temperatures the first five days of the month around 10° below average across much of the state. A significant warm-up happened during the second week of October, with temperatures averaging 5 to 8° above average between October 6 and 14. Most stations recorded their monthly maximum temperatures during this period, with nearly all of them making it to the 80s. The warmest reading of the month, 94°F, was recorded at the Illinois Climate Network station at Brownstown (Fayette County) on October 9. For the National Weather Service Cooperative Observer Program, the warmest reading of October, 89°F, was recorded at seven stations. These included a station in Wayne County on October 7, stations in Clark, Fayette, Marion, Randolph, and Richland Counties on October 8, and a station near Perry (Pike County) on October 11.

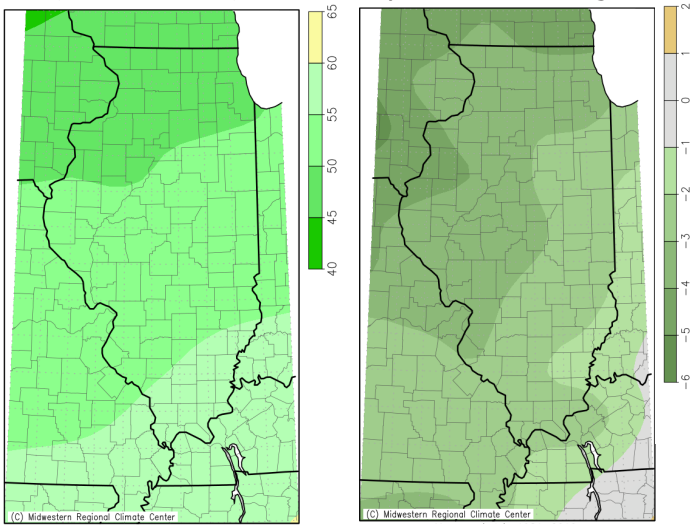
Following this warm period, temperatures fell well below average again for the rest of October, especially the last week when temperatures were 8 to 11° below average across most of the state. Nearly all stations reached their monthly minimum temperatures during the second half of the month, most during the last week. These ranged from the mid-20s in northern Illinois to the lower 30s in southern Illinois. The lowest reading of the month, 22°F, was recorded on October 31 at stations near McHenry (McHenry County) and Mundelein (Lake County).

Growing degree days (DD, base 50°, from April 1) ranged from around 3000 DD in northern Illinois to around 4000 DD in far southern Illinois (Figure 2b). This was slightly above the long-term average in some areas of far northern Illinois, including around Chicago. Most of the rest of the state was below the long-term average by up to 200 DD.

Precipitation averaged 2.93 inches in October, 0.31 inches below the long-term average (Table 1, Figure 2a). A large precipitation gradient existed across the state in October, with southern Illinois very wet and northern and especially central

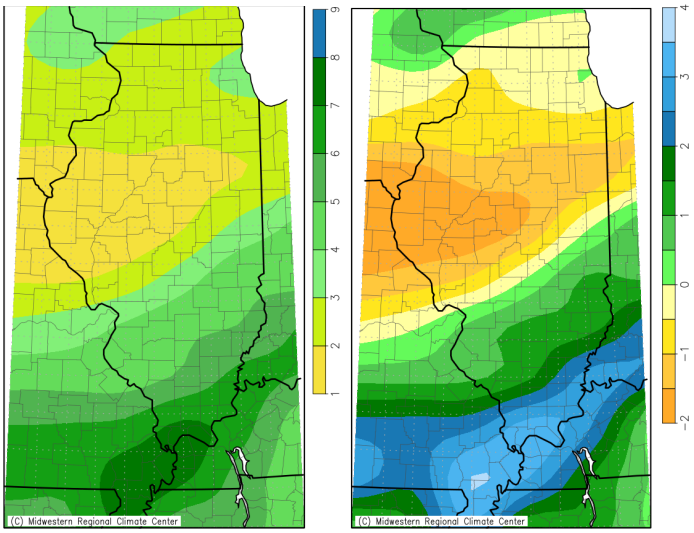
AVERAGE TEMPERATURE (°F)

Oct 1, 2020 to Oct 31, 2020 | Departure from average



ACCUMULATED PRECIPITATION (IN)

Oct 1, 2020 to Oct 31, 2020 | Departure from average



ACCUMULATED SNOW (IN)

Oct 1, 2020 to Oct 31, 2020 | Departure from average

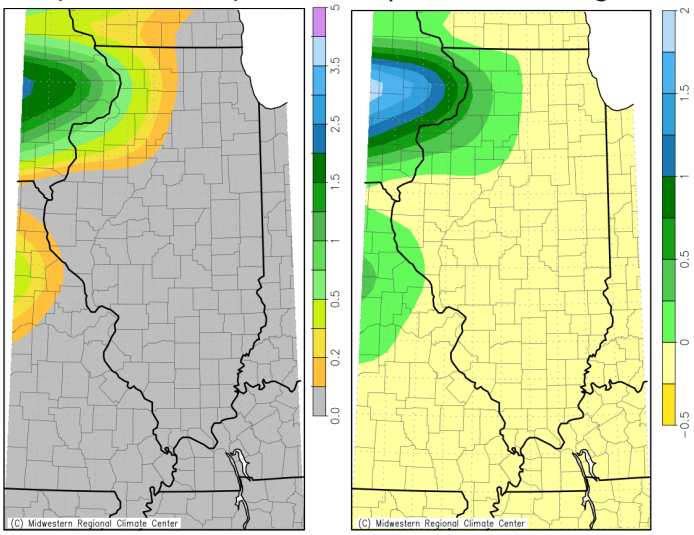
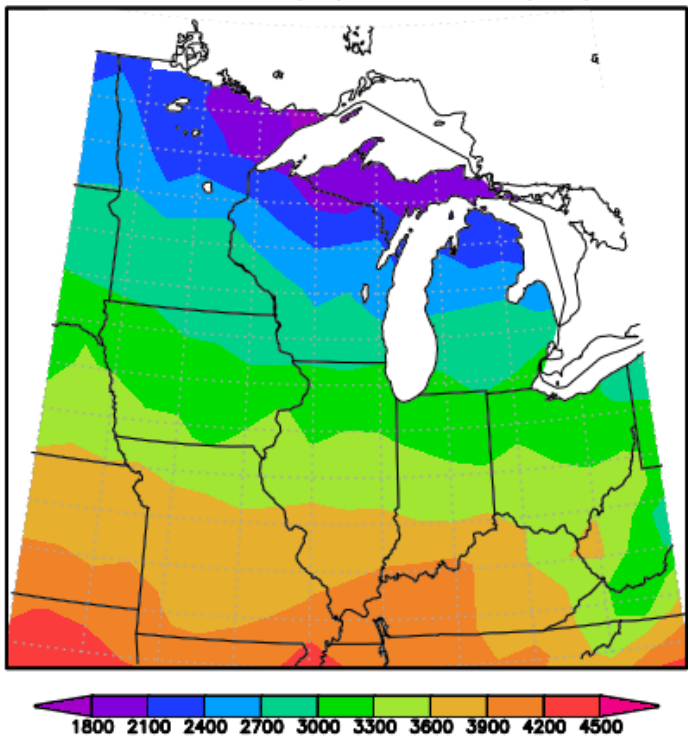


Figure 2a. Illinois temperature, precipitation, snow and their departures from average for October 2020. Source: cli-MATE, Midwestern Regional Climate Center. https://mrcc.illinois.edu/CLIMATE. Information accessed on November 9, 2020.

TOTAL MGDD FROM 4/1/2020 TO 10/31/2020



MGDD DEPARTURE FROM 4/1/2020 TO 10/31/2020

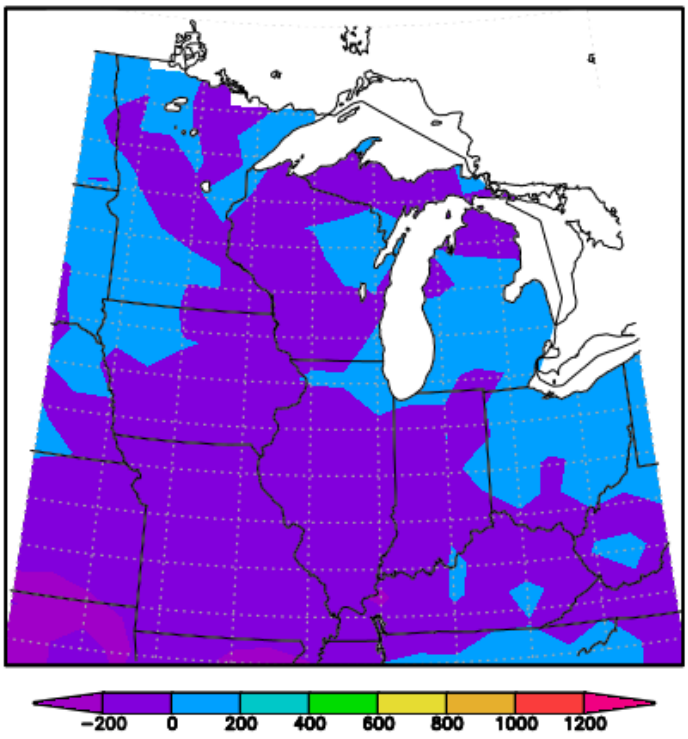


Figure 2b. Illinois growing degree days and departure from average through the end of October. Source: Midwestern Regional Climate Center. https://mrcc.illinois.edu, accessed on November 1, 2020.

Table 1 Temperature and Precipitation for October 2020

	Temp. (°F)	Departure from long-term avg. (1981–2010)	Precip. (in)	Departure from long-term avg. (1981–2010)
Illinois	52.1	-2.3	2.93	-0.31
CRD 1 (northwest)	48.5	-3.1	2.44	-0.48
CRD 2 (northeast)	49.3	-2.8	2.61	-0.34
CRD 3 (west)	51.0	-2.9	1.33	-1.70
CRD 4 (central)	51.4	-2.3	1.56	-1.53
CRD 5 (east)	51.5	-2.1	2.16	-1.03
CRD 6 (west southwest)	52.9	-2.7	2.13	-1.10
CRD 7 (east southeast)	53.9	-1.8	4.20	+0.68
CRD 8 (southwest)	55.6	-1.8	4.81	+1.10
CRD 9 (southeast)	55.8	-1.5	5.78	+2.08

Data from NOAA's National Centers for Environmental Information, accessed 11/9/2020.

Illinois very dry. This is the opposite pattern from September, when northern Illinois was very wet and southern Illinois was very dry. Continuing from a below average end to September, October started very dry across the entire state, with most areas receiving less than 0.5 inches in the first 15 days of the month, with much of southern Illinois receiving less than 0.1 inch. However, the atmosphere shifted in the second half of the month to a pattern that brought widespread precipitation to southern Illinois. Monthly totals across most of this area were over 4 to 5 inches, with some areas of far southern Illinois receiving 7 inches or more. A station near New Burnside (Johnson County) had the highest monthly total of 8.36 inches. Almost all the precipitation in these areas fell in the second half of October and resulted in monthly departures of around 1 to 3 inches above average.

While most areas in the northern half of Illinois would receive an inch or more of precipitation in the second half of October as well, totals were not nearly as high as in southern Illinois. As a result, most areas to the north of I-70 received less than 3 inches of precipitation in October, which was drier than average in most of these areas. Central Illinois was the driest part of the state, with widespread precipitation totals 1 inch or more below average, especially in west central Illinois, where monthly totals were commonly less than 2 inches. A station near Springfield (Sangamon County) reported only 0.97 inches for October.

Snow: The northwestern corner of Illinois had measurable snowfall in the second half of October (Figure 2a). Monthly totals were generally under an inch, with the largest totals near the Iowa border. The highest total was 1.7 inches at a station near Mount Carroll (Carroll County).

Severe weather reports: The NOAA Storm Prediction Center recorded one severe weather report for October in Illinois, a wind report near Grayville (Edwards County) on October 23. (Multiple reports can be generated for a single event.)

Drought: October started with much of central and southern Illinois as well as areas along the Indiana border in northern Illinois classified as abnormally dry (D0) or worse

by the United States Drought Monitor after a dry September in these areas. This included an area of moderate drought (D1) from the Lincoln (Logan County) and Decatur (Macon County) areas east-southeast to the Indiana border. With the dry start to October, this area of D1 expanded so that by the October 20 map, most areas between the I-70 and I-72 corridors and east of I-55 were D1 or worse. This included an area of severe drought (D2) that covered most of Macon and Piatt Counties as well as parts of surrounding counties, altogether covering 1.86% of the state. The last time any part of Illinois was classified as D2 was almost exactly a year earlier when a small part of Gallatin County was D2 on the October 15, 2019 map. Late-month precipitation helped improve the drought situation somewhat, with the D2 area being removed on the October 27, 2020 map (Figure 4), as well as some limited improvement in the D1 and D0 areas. On this map, 50.86% of the state was classified as D0 or worse, with 15.27% classified as D1 drought.

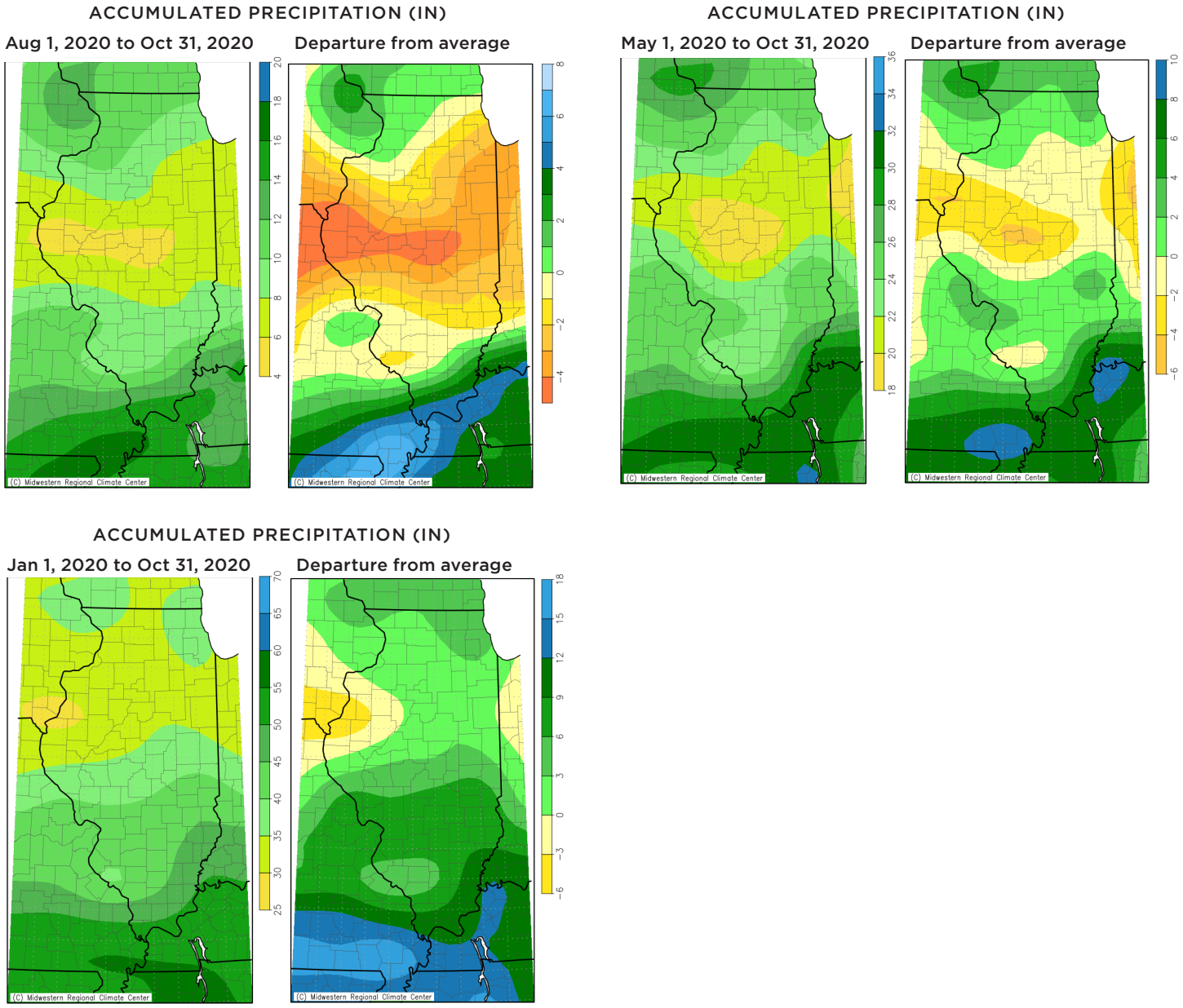
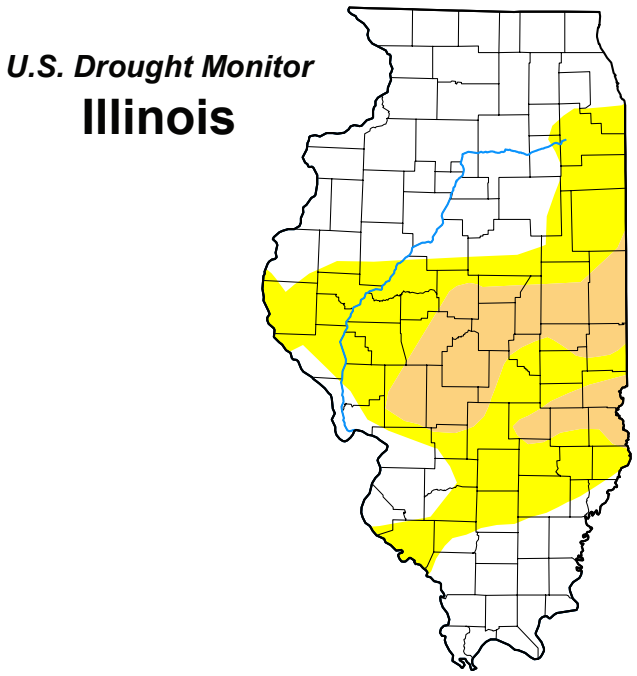


Figure 3. Illinois precipitation and precipitation departure from average for last 3 months (top left), last 6 months (top right) and year-to-date (bottom). Source: cli-MATE, Midwestern Regional Climate Center. https://mrcc.illinois.edu/CLIMATE. Information accessed on November 9, 2020.



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	50.86	33.86	15.27	0.00	0.00	0.00
Last Week *10-20-2020*	38.92	42.21	17.01	1.86	0.00	0.00
3 Months Ago *07-28-2020*	94.05	5.71	0.24	0.00	0.00	0.00
Start of Calendar Year *12-31-2019*	100.00	0.00	0.00	0.00	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 *10-29-2019*	99.31	0.69	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

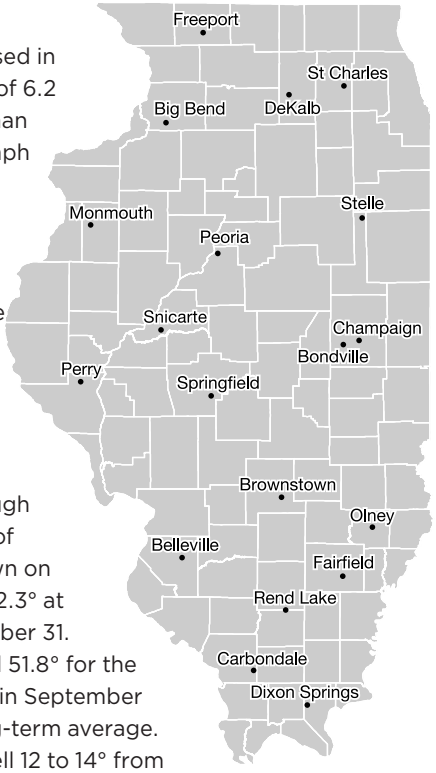
Author:
David Miskus
NOAA/NWS/NCEP/CPC

Figure 4. U.S. Drought Monitor report for Illinois. Source: U.S. Drought Monitor. Author: David Miskus, NOAA/NWS/NCEP/CPC https://droughtmonitor.unl.edu, accessed on November 9, 2020.

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 October are presented in Table 2.



Wind speeds increased in October to an average of 6.2 mph, 1.2 mph greater than in September but 0.4 mph less than the network's monthly average. ICN Monmouth had the windiest month with an average of 9.7 mph. The highest reported wind gust was 40.8 mph, recorded at ICN Big Bend on October 14.

Air temperatures fluctuated greatly through the month from a high of 93.6° at ICN Brownstown on October 9 to a low of 22.3° at ICN St. Charles on October 31. Temperatures averaged 51.8° for the month, 13.1° lower than in September and 2.6° below the long-term average.

Soil temperatures fell 12 to 14° from September to averages in the mid- to high 50s. Under bare soil, temperatures ranged from 33.7 to 89.6° at 2 inches and 35.4 to 81.7° at 4 inches. Temperatures under sod ranged from 40.7 to 83.9° at 4 inches and 43.4 to 70.4° at 8 inches.

Precipitation averaged 3.27 inches in October, a 0.11-inch decrease from in September but 0.32 inches above the long-term average. The first half of the month was dry with the state receiving only 0.25 inches from October 1 to 15. The state was significantly wetter in the second half of the month, especially in the south, which received 5.47 inches. ICN Dixon Springs reported 8.02 inches, the highest for the month, while ICN Perry had the lowest with only 1.22 inches.

Soil moisture increased in all regions at depths down to 4 inches. The largest increases were in southern Illinois where soil moisture levels doubled from 0.19 water fraction by volume (wfv) on October 1 to 0.38 wfv on October 31. Moisture levels in western Illinois rose only 7%.

At depths of 20 inches and greater, soil moisture levels increased in southern Illinois, but declines occurred in the east and west central regions.

Table 2. Data from the Illinois Climate Network (ICN), October 2020

Station	Wind			Air Temperature (°F)			Total Solar Radiation (MJ/m²)
	Avg. Speed (mph)	Avg. Direction (°)	Max. Gust (mph)	Max.	Min.	Avg.	
Belleville	6.0	167.2	33.4	89.5	28.4	55.5	354.1
Big Bend	6.8	198.1	40.8	82.5	24.9	48.5	333.6
Bondville	9.7	180.5	37.3	83.4	24.8	51.5	353.1
Brownstown	6.0	171.7	31.7	93.6M	27.9M	53.0M	350.8
Carbondale	5.1	183.5	32.8	86.2M	29.3M	55.3M	365.8
Champaign	3.3	173.4	21.4	84.1	29.1	52.2	346.4
DeKalb	7.8	203.4	39.7	82.5	24.1	47.3	337.0
Dixon Springs	3.0	165.7	28.5	84.0	30.9	55.6	333.9
Fairfield	5.7	152.7	31.7	87.5	28.3	54.9	354.5
Freeport	5.0M	199.3M	33.0M	82.3M	23.9M	46.6M	320.1M
Monmouth	9.7	206.9	40.1	83.1	23.5	49.5	355.9
Olney	4.5	160.6	30.3	89.5	28.1	54.4	349.4
Peoria	6.6	176.8	34.7	82.2	28.4	50.9	355.9
Perry	5.7	203.2	32.3	85.5	27.9	51.7	346.7
Rend Lake	3.6	164.9	26.5	89.8	29.4	55.3	338.0
Snicarte	7.9	195.8	35.1	84.9	29.3	52.1	359.1
Springfield	5.6	179.3	31.5	83.9	29.8	53.0	350.9
St. Charles	6.3	183.0	38.3	81.3	22.3	47.9	327.1
Stelle	9.6	200.4	39.9	82.7M	25.6M	49.8M	334.4

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	77.7	5.05	46.5	2.83	58.4	59.5	56.2	57.8
Big Bend	71.4	2.16	38.4	2.61	55.0	54.9	54.8	56.1
Bondville	73.9	2.06	41.9	2.88	54.2	58.1	55.3	54.7
Brownstown	71.9	4.73	42.5M	2.57M	60.9	59.7	57.7	57.3
Carbondale	83.6	5.52	49.2M	2.71M	61.5	60.2	59.7	58.6
Champaign	74.2	2.40	42.9	2.50	58.1	59.3	57.1	56.7M
DeKalb	73.1	2.22	37.9	2.56	53.9	53.9	54.6	52.2
Dixon Springs	82.2	8.02	49.1	2.44	60.6	61.9	59.6	61.5
Fairfield	77.1	4.69	46.4	2.73	61.2	61.9	59.7	60.6
Freeport	70.7	2.46M	36.6M	2.31M	55.8M	54.4M	50.9M	50.3M
Monmouth	72.0	1.39	39.5	2.89	54.0	54.3	54.3	52.3
Olney	77.2	5.48	46.0	2.67	59.2	60.8	58.7	58.1
Peoria	70.1	1.97	40.3	2.80	56.0	55.1	54.3	53.8
Perry	73.1	1.22	42.0	2.71	57.0	57.9	55.9	55.7
Rend Lake	74.5	5.71	46.0	2.64	59.5	60.9	59.7	58.8
Snicarte	69.0	1.35	40.6	3.04	58.0	59.1	56.6	57.7
Springfield	70.7	1.43	42.2	2.74	58.1	58.0	56.8	56.3
St. Charles	73.0	2.89	38.6	2.47	53.5	54.5	52.3	51.2
Stelle	73.2	1.36	40.4M	2.75M	55.5	56.1	54.3M	53.1

M = Missing data.

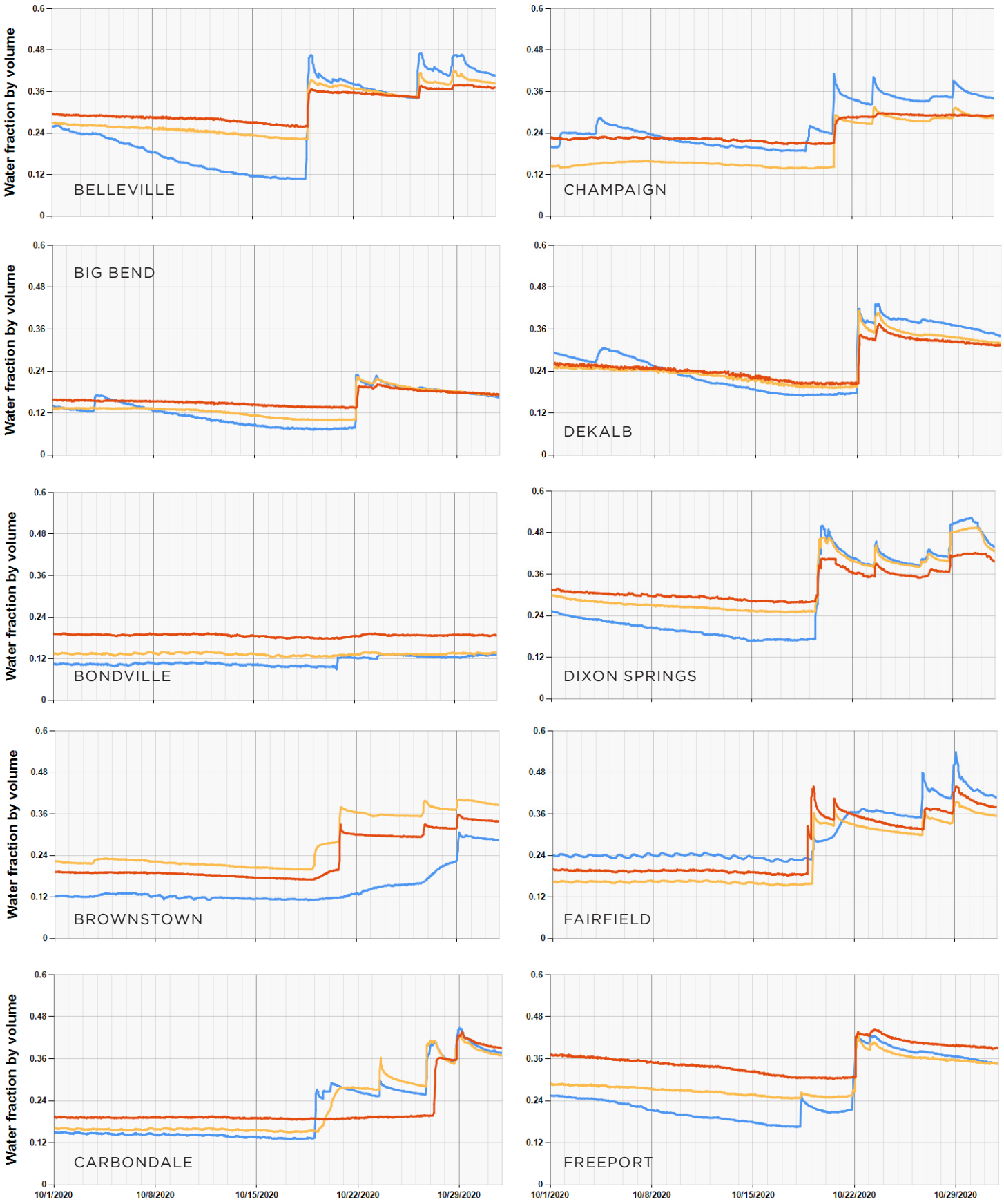


Figure 5. October soil moisture levels at ICN stations: 2 in, 4 in, and 8 in

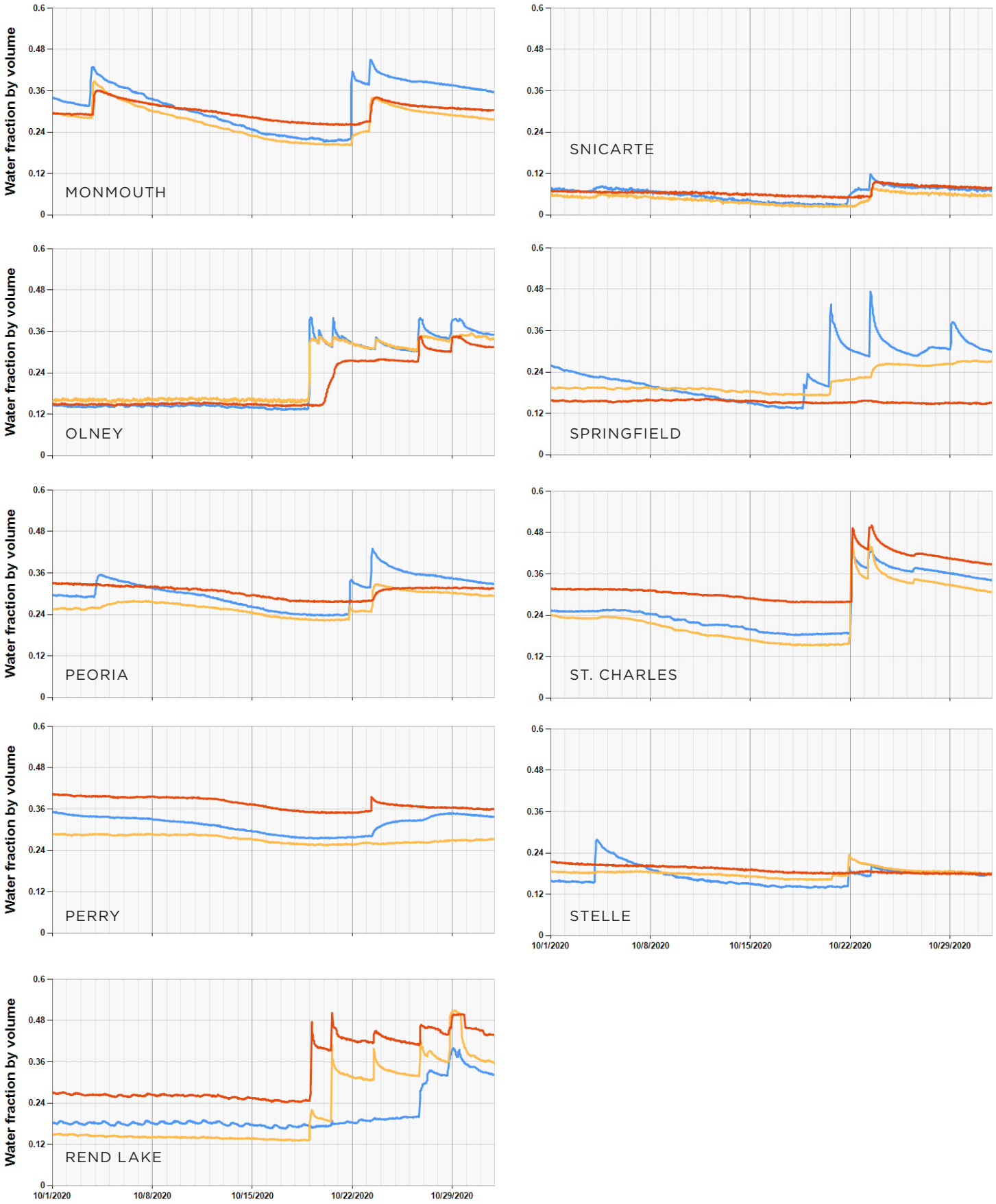


Figure 5 (continued). October soil moisture levels at ICN stations: 2 in, 4 in, and 8 in

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.

Provisional monthly mean flows for this month for 26 streamgaging stations located throughout Illinois are shown in Table 4, compared to statistics of the 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 October (approximately 130 percent of the median) and below the mean for October (approximately 60 percent of the mean). Monthly mean discharge values ranged mostly from below normal to above normal for October.

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-September water levels at 23 reservoirs for which levels were reported last month and this month, reported end-of-October water levels were lower at 13 reservoirs and higher at 10 reservoirs. For the 24 reservoirs with measurements reported at the end of October, water levels were below normal target pool or spillway level at 15 reservoirs, above normal target pool or spillway level at 7 reservoirs, and at about full pool level at 2 reservoirs. The Pana Lake level remained intentionally drawn down to facilitate maintenance. Carlinville supply has recently been from its Lake 2, with a reported water level of 1.8 feet below full.

Major Reservoirs. Compared to water levels at the end of September, at the end of October the water level at Lake Shelbyville was 0.1 foot lower, Carlyle Lake was 0.2 feet higher, and Rend Lake was 0.1 foot lower. At the end of October, Lake Shelbyville was 0.1 foot above the seasonal target level, Carlyle Lake was 0.5 feet above the seasonal target level, and Rend Lake was 0.2 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 October 2020 mean level for Lake Michigan was 581.5 feet. The monthly mean level one year ago (October 2019) was 581.7 feet. The long-term average lake level for October is 578.9 feet, based on 1918-2019 data. In this period of record, the lowest mean level for Lake Michigan for October occurred in 1964 at 576.4 feet, and the highest mean level for October occurred in 1986 at 582.4 feet. The month-end level of Lake Michigan was 581.5 feet. All values are provided by the U.S. Army Corps of Engineers Detroit District.

Table 3. Peak Stages for Major Rivers during October 2020

River	Station	River mile*	Flood stage (feet)*	Peak stage (feet)**	Date
Illinois	Morris	263.1	16	6.1	25
	La Salle	224.7	20	13.0	24
	Peoria	164.6	18	12.5	25-26
	Havana	119.6	14	7.7	27
	Beardstown	88.6	14	9.9	26
	Hardin	21.5	25	20.0	26-27
Mississippi	Dubuque	579.9	17	10.1	24
	Keokuk	364.2	16	5.7	29
	Quincy	327.9	17	12.2	19
	Grafton	218.0	18	16.0	26
	St. Louis	180.0	30	7.1	27
	Chester	109.9	27	10.3	30
	Thebes	43.7	33	16.2	30
Ohio	Cairo	2.0	40	28.0	31

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).**
****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, October 2020

Station	Drainage area (sq mi)	Years of record*	2020 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	5,180	3,613	2,928	above normal	18	31
Rock River near Joslin	9,549	81	6,579	5,174	4,210	above normal	23	31
Pecatonica River at Freeport	1,326	106	1,266	807	642	above normal	14	31
Green River near Geneseo	1,003	84	305	409	217	normal	40	31
Edwards River near New Boston	445	86	54	150	49	normal	47	31
Kankakee River at Momence	2,294	106	770	1,282	931	normal	69	31
Iroquois River near Chebanse	2,091	96	83	739	232	below normal	79	31
Fox River at Dayton	2,642	105	1,472	1,264	894	above normal	29	31
Vermilion River at Pontiac	579	78	14	155	30	normal	64	31
Spoon River at Seville	1,636	106	151	535	183	normal	56	31
LaMoine River at Ripley	1,293	99	49	443	115	below normal	73	31
Bear Creek near Marceline	349	76	2.0	128	14	below normal	77	31
Mackinaw River near Congerville	767	76	42	210	30	normal	47	31
Salt Creek near Greenview	1,804	79	151	545	224	below normal	74	31
Sangamon River at Monticello	550	110	9.2	170	36	below normal	85	31
South Fork Sangamon near Rochester	867	71	8.8	201	26	normal	67	31
Illinois River at Valley City	26,743	82	5,617	13,286	8,067	much below normal	90	31
Macoupin Creek near Kane	868	92	13	254	40	below normal	70	31
Vermilion River near Danville	1,290	99	72	369	113	below normal	74	31
Kaskaskia River at Vandalia	1,940	51	277	568	181	normal	51	31
Shoal Creek near Breese	735	78	77	188	46	normal	40	31
Embarras River at Ste. Marie	1,516	109	177	427	111	normal	43	31
Skillet Fork at Wayne City	464	103	65	109	12	above normal	26	31
Little Wabash River below Clay City	1,131	106	198	238	52	above normal	29	31
Big Muddy River at Plumfield	794	50	97	155	73	normal	38	31
Cache River at Forman	244	97	258	61	16	much above normal	8	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, October 2020

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	September reported pumpage (million gallons)
Altamont	Effingham	582.0	–1.7	–0.4	–2.5	36	6.5
Bloomington	McLean	719.5	–3.6	–1.9	–3.6	32	N/A
Carlinville	Macoupin	571.1	–1.0	–0.3	–1.5	35	24.6
Carlyle[1]	Clinton	445.0	+0.5	+0.2	+0.2	42	N/A
Decatur[1,3]	Macon	614.3	–2.3	–0.9	–1.3	37	1,050.6
Evergreen[4]	Woodford	720.0	–1.7	–0.3	–3.0	29	N/A
Glenn Shoals[2]	Montgomery	590.0	–1.8	–0.2	–0.9	24	w/Hillsboro
Highland	Madison	500.0	–0.4	+0.1	–0.6	32	35.1
Hillsboro[2]	Montgomery	589.0	N/A	N/A	–0.3	23	37.7
Jacksonville[2]	Morgan	644.0	N/A	N/A	–0.8	18	w/Mauvaise Terre
Kinkaid	Jackson	420.0	0.0	+0.4	–0.7	32	45.9
Lake of Egypt	Williamson	500.0	0.0	+0.5	–1.4	25	N/A
Mattoon	Coles	632.0	–1.0	+0.5	–0.8	25	w/Paradise
Mauvaise Terre[2]	Morgan	588.5	N/A	N/A	–0.2	20	no meter
Mt. Olive (new)	Macoupin	600.0	N/A	N/A	–0.2	5	w/Mt. Olive (old)
Mt. Olive (old)	Macoupin	654.0	–1.6	N/A	–1.3	21	4.8
Pana	Christian	641.6	N/A	N/A	–1.7	34	N/A
Paradise	Coles	685.0	–1.3	+0.2	–0.6	28	61.0
Paris (east)[5]	Edgar	660.0	+0.1	+0.6	–0.5	9	Not PWS
Paris (west)[5]	Edgar	660.1	+0.1	+0.4	–0.2	9	w/Paris (east)
Raccoon[1][5]	Marion	477.0	+0.5	+0.5	–0.2	12	95.8
Rend	Franklin	405.0	+0.2	–0.1	+0.3	42	N/A
Salem[3]	Marion	546.5	+0.1	+0.2	–0.7	24	30.1
Shelbyville[1]	Shelby	599.7	+0.1	–0.1	0.0	42	Not PWS
Sparta[3]	Randolph	497.0	–1.7	–0.7	–1.3	21	N/A
Spring[3,4]	McDonough	654.0	–0.4	–0.2	–0.9	37	47.6
Springfield[1,3]	Sangamon	560.0	–2.1	–0.7	–2.1	37	663.6
Taylorville	Christian	590.0	–0.6	–0.1	–0.8	27	46.9
Vermilion[4]	Vermilion	581.7	–0.8	–0.2	–0.8	35	194.3

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 November 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 27 observation wells were above the long-term average for October. Levels averaged 0.49 feet above average and ranged from 3.50 feet below to 4.41 feet above normal levels (Table 6).

Comparison to September 2020. Shallow groundwater levels were slightly above those of the previous month. Levels averaged 0.13 feet above and ranged from 1.91 feet below to 4.05 feet above September 2020 levels.

Comparison to October 2019. Shallow groundwater levels in October were below levels from one year ago. Levels averaged 1.89 feet below and ranged from 9.62 feet below to 3.81 feet above October 2019 levels.

Table 6. Month-End Shallow Groundwater Level Data Sites, October 2020

Well name	County	Well depth (feet)	This month's reading (depth to water, feet)	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	2.95	4.01	3.84	1.58	2.36
Bondville	Champaign	21.00	9.58	–2.98	–3.50	–1.02	–0.86
Bondville (ICN)	Champaign	20.00	7.68	–0.99	–0.98	–0.91	–1.18
Boyleston	Wayne	23.00	8.45	–1.82	–1.09	–0.18	–2.89
Brownstown	Fayette	15.00	2.70	1.96	2.08	1.74	1.37
Carbondale	Jackson	26.00	5.23	3.53	3.55	2.28	3.52
Coffman	Pike	28.00	N/A	N/A	N/A	N/A	N/A
Crystal Lake	McHenry	18.00	4.36	0.40	1.24	–0.22	–0.94
DeKalb	DeKalb	25.00	8.10	–2.28	–2.30	–0.24	–6.66
Fairfield	Wayne	21.00	6.20	–0.72	–0.78	–0.35	–0.94
Fermi Lab	DuPage	15.00	9.70	–2.52	–2.16	0.15	–8.50
Freeport	Stephenson	26.00	18.10	–0.29	–0.16	–1.59	–9.62
Galena	JoDaviess	25.00	19.79	–0.07	1.18	–0.03	–2.77
Good Hope	McDonough	30.00	10.00	–1.79	–0.44	–1.55	–3.57
Greenfield	Greene	21.00	16.57	–1.26	–1.20	–1.04	–1.74
Janesville	Coles	11.00	5.27	0.55	0.91	1.63	–1.10
Monmouth	Warren	27.00	12.78	–1.16	–1.23	–0.45	–3.63
Mt. Morris	Ogle	55.00	20.47	–1.50	–0.64	–1.51	–6.95
Olney	Richland	19.00	3.45	2.37	2.31	2.01	1.68
Perry	Pike	20.00	9.24	2.47	2.04	–1.91	0.53
Rend Lake	Jefferson	21.00	4.41	1.52	1.45	0.82	1.47
SE College	Saline	11.00	2.97	4.20	4.41	4.05	3.81
Snicarte	Mason	42.00	35.70	0.66	2.22	0.18	1.51
Sparta	Randolph	27.00	8.27	0.13	1.55	0.17	N/A
Springfield	Sangamon	20.00	10.19	–2.36	–1.67	–0.67	–4.20
St. Charles	Kane	21.00	23.06	–0.07	0.55	–1.13	–8.23
St. Peter	Fayette	15.00	4.86	–1.39	–0.79	0.33	N/A
SWS #2	St. Clair	80.00	12.82	1.08	2.69	1.36	0.39
				0.06	**0.49**	**0.13**	**–1.89**

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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