

ILLINOIS WATER AND CLIMATE SUMMARY

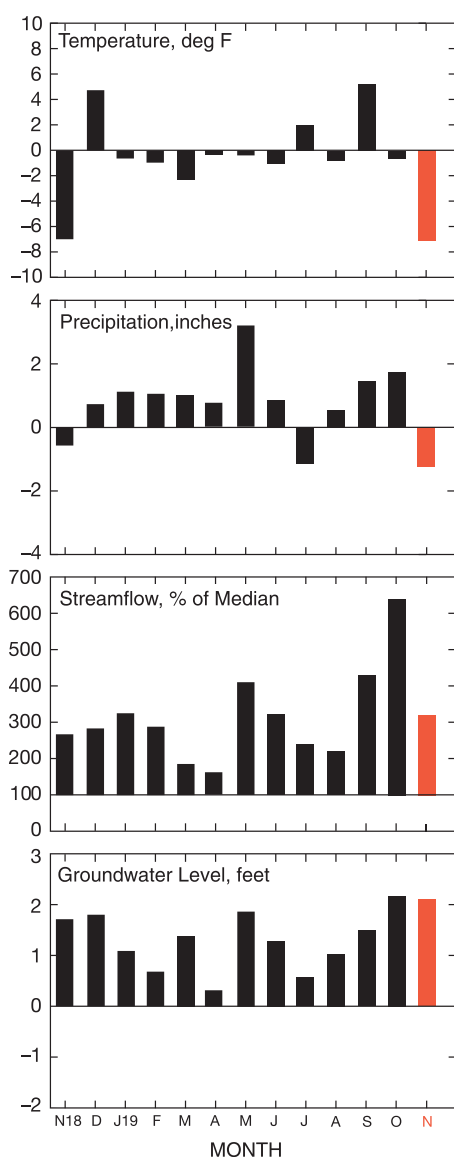


Figure 1. Statewide departures from normal.

November 2019 OVERVIEW

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

Air temperatures averaged 36.2°F in November, 6.3° below the long-term average (Figure 1). The southwest crop reporting district (CRD) was the warmest with an average of 39.8°F. The lowest regional temperature was 32.9°F, reported by the northwest CRD.

Precipitation averaged 2.40 inches, 1.07 inches below the long-term average (Figure 1). The southeast CRD was the wettest with an average of 4.48 inches. The driest was the northeast CRD with 1.46 inches.

Soil moisture increased 10% on average at 2-inch depths. Moisture levels remained relatively steady at depths of 4 inches and greater. Overall, soil moisture at the end of November was at or above the field capacity for most of the soils monitored.

Mean provisional streamflow aggregated statewide was above the long-term median flow for November, about 310% of median (Figure 1). Monthly mean discharge values ranged from normal to much above normal for November. Illinois River and Mississippi River water levels exceeded the local flood stages at several locations in early November.

Water surface levels at the end of November were below the full pool or target level at 3 of 23 reporting reservoirs. At the end of November, Lake Shelbyville was 1.0 foot above the seasonal target level, Carlyle Lake was 2.5 feet above the seasonal target level, and Rend Lake was 2.2 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 normal this month with an average departure of 2.05 feet from the period of record (Figure 1). A decrease of 0.06 feet in departures were observed from the deviation in normal groundwater levels between October and November. Levels averaged 0.34 feet above October 2019 and 0.36 feet above November 2018 levels.

Weather/Climate Information

— KEVIN GRADY

The following description of temperatures, 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.

November in Illinois was drier and much colder than average across most of the state.

Temperatures averaged 36.2°F, 6.3° below the long-term average (Table 1a, Figure 2). The first half of November in particular was very cold, continuing from a cold end to October. Temperatures the first 15 days of the month were 11 to 13° below average across nearly the entire state. During this time, 152 daily low minimum temperature and 135 daily low maximum temperature records were broken across Illinois, according to the NOAA National Centers for Environmental Information (NCEI). The second week of November in particular was bitterly cold with most stations' monthly minimum temperatures in the single digits occurring either on November 12 or 13. Four stations in northwest Illinois dropped below 0° that week, including one near Altona (Knox County) hitting -4° on November 13, the lowest reading of the month for Illinois.

Temperatures moderated a bit near the end of the month, with the last 10 days of November near to slightly above average across the state. The warmest reading of the month of 70°, however, occurred on November 11 at a station in Randolph County. Two days later, the same station had a low of 11° on November 13, a 59° drop. Most stations in northern Illinois had monthly maximum temperatures in the 50s, while most in southern Illinois had maximum temperatures in the 60s.

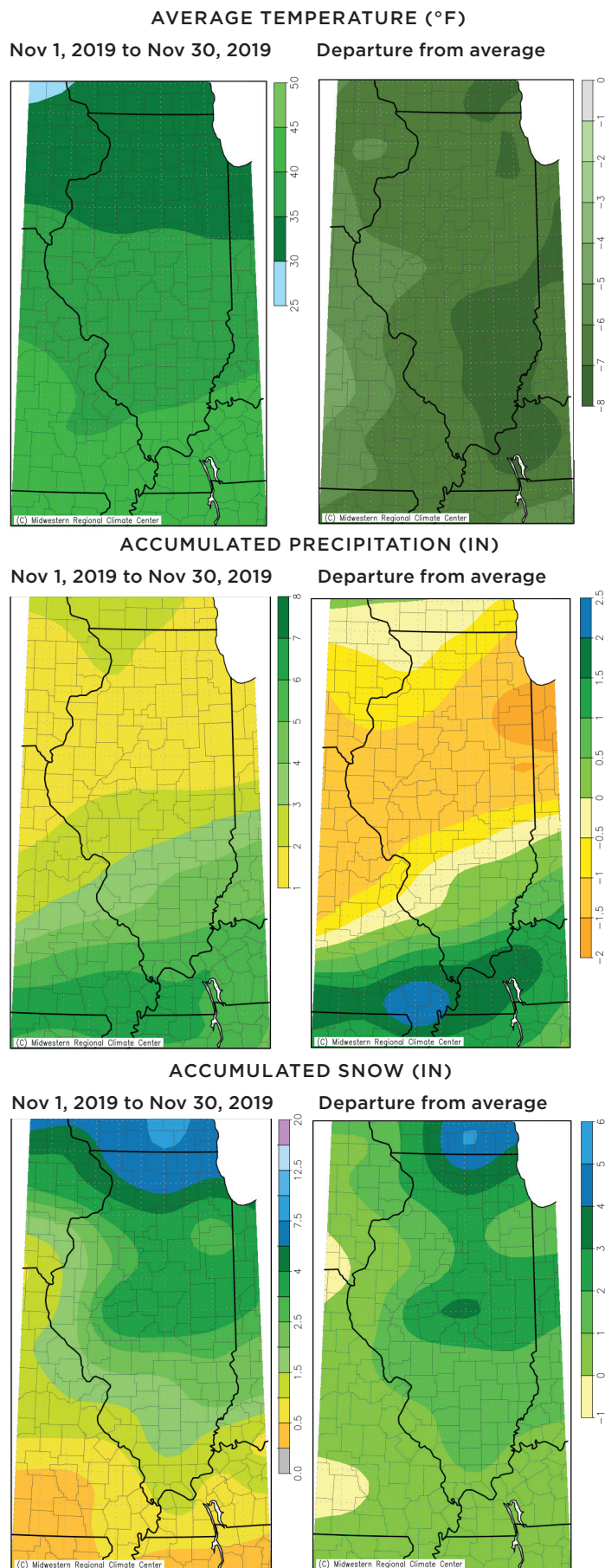


Figure 2 Illinois temperature, precipitation, snow and their departures from average for November 2019.

Source: cli-MATE, Midwestern Regional Climate Center.

<http://mrcc.illinois.edu/CLIMATE>, accessed on December 9, 2019.

Precipitation averaged 2.40 inches in November, 1.07 inches below the long-term average (Table 1a, Figure 2). November is only the second month so far this year—along with July—to have below average precipitation statewide. Most areas north of I-70 were relatively dry this month, 1 to 2 inches below average in many places. Meanwhile, the southern part of the state saw near to above average precipitation, especially in far southern Illinois, with some areas receiving around 1 inch above average. The highest monthly total in Illinois was recorded at a station in Pope County with 7.42 inches.

Snow: Almost the entire state saw measurable snow during November, with most areas receiving at least 1 inch. Totals were highest in the northern half of Illinois, with many places along and north of the I-72 corridor (except for western Illinois) receiving at least 3 inches. Along the Wisconsin border, totals of 5+ inches were common. The highest monthly snowfall total in Illinois was recorded near Bull Valley (McHenry County) with 11.7 inches. Most of the state received 1 to 2+ inches above average for November. Nearly all this snow occurred in the first half of the month, including a notable storm that affected most of the state as it moved through around November 11, bringing with it the bitter cold temperatures seen that week.

Severe weather reports: The NOAA Storm Prediction Center recorded 8 severe weather reports for November in Illinois, 1 for hail, and 7 for wind. (Multiple reports can be generated for a single event.) All the wind reports were from storms that moved through the state during the evening and overnight hours of November 26.

Drought: October ended with a very small pocket of abnormal dryness (DO) in parts of eastern Gallatin, Hardin, and White Counties, which the Drought Monitor removed during the first week of November (Figure 4). Despite most of Illinois receiving below average precipitation in November, soil moisture and streamflows remained near or above average across the state following a wet October. Thus, the Drought Monitor reported Illinois free of drought and abnormally dry conditions on every map released in November.

Autumn (September–November) was wetter and slightly cooler than average in the northern part of Illinois, while the southern part was slightly drier than average with near-normal temperatures. Seasonal temperatures averaged 53.8°F statewide, 0.6° below the long-term average (Table 1b). Autumn started very warm with summerlike heat lasting through September into the first couple of days of October before moderating. September was the fourth warmest on record for Illinois (back to 1895). Stations reported that seasonal highs were in the 90s or upper 80s, with many of these occurring during either mid-September or the first two days of October. Temperatures turned much colder by the end of October and remained much below average for most of November. Seasonal lows typically were in the single digits, with many of these occurring on November 12 or 13. The difference between the warmest reading of the season in Illinois, 97°F (Alexander and Pope Counties), and the coldest, -4°F (Knox County), was 101°.

Autumn precipitation averaged 12.45 inches, 2.51 inches above the long-term average (Table 1b.). Northern Illinois, in particular, was quite wet this autumn, with many stations reporting 15–20 inches or even more of precipitation. Most areas along and north of I-80 received precipitation over 6 inches or more above average. Stockton (Jo Daviess County) had the highest autumn precipitation total with 24.35 inches. Much of the above average precipitation in northern Illinois was due to a wet September in the area, ending summertime drought by the end of the month.

On the other hand, September was quite dry for most of southern Illinois, allowing drought to develop. This drought persisted through the end of October, which was very wet for most of the state, followed by a drier than average November for most of Illinois to wrap up autumn. Much of central and southern Illinois received 8–12 inches this autumn, with areas near St. Louis and parts of east central Illinois being the driest. Medora (Macoupin County) had one of the lowest autumn totals with only 3.89 inches.

Table 1a. Temperature and Precipitation for November 2019

	Temp. (°F)	Departure from long- term avg. (1981–2010)	Precip. (in)	Departure from long- term avg. (1981–2010)
Illinois	36.2	-6.3	2.40	-1.07
CRD 1 (northwest)	32.9	-6.0	1.92	-0.77
CRD 2 (northeast)	33.2	-6.6	1.46	-1.58
CRD 3 (west)	36.2	-5.3	1.56	-1.39
CRD 4 (central)	35.8	-5.7	1.72	-1.53
CRD 5 (east)	35.0	-6.5	1.52	-1.87
CRD 6 (west southwest)	37.4	-6.6	2.09	-1.54
CRD 7 (east southeast)	37.3	-6.8	3.28	-0.68
CRD 8 (southwest)	39.8	-6.4	4.07	-0.16
CRD 9 (southeast)	39.4	-6.9	4.48	+0.20

Data from NOAA's National Centers for Environmental Information, accessed 12/9/2019.

Table 1b. Temperature and Precipitation for Autumn (Sep - Nov) 2019

	Temp. (°F)	Departure from long- term avg. (1981–2010)	Precip. (in)	Departure from long- term avg. (1981–2010)
Illinois	53.8	-0.6	12.45	+2.51
CRD 1 (northwest)	50.4	-1.0	16.07	+7.11
CRD 2 (northeast)	50.7	-1.3	16.27	+6.98
CRD 3 (west)	52.9	-0.8	12.79	+3.29
CRD 4 (central)	53.2	-0.4	12.83	+3.36
CRD 5 (east)	53.0	-0.6	11.62	+2.06
CRD 6 (west southwest)	54.8	-0.8	9.22	-0.89
CRD 7 (east southeast)	55.4	-0.3	10.48	-0.11
CRD 8 (southwest)	57.5	+0.1	11.08	-0.13
CRD 9 (southeast)	57.6	+0.2	11.59	+0.48

Data from NOAA's National Centers for Environmental Information, accessed 12/9/2019.

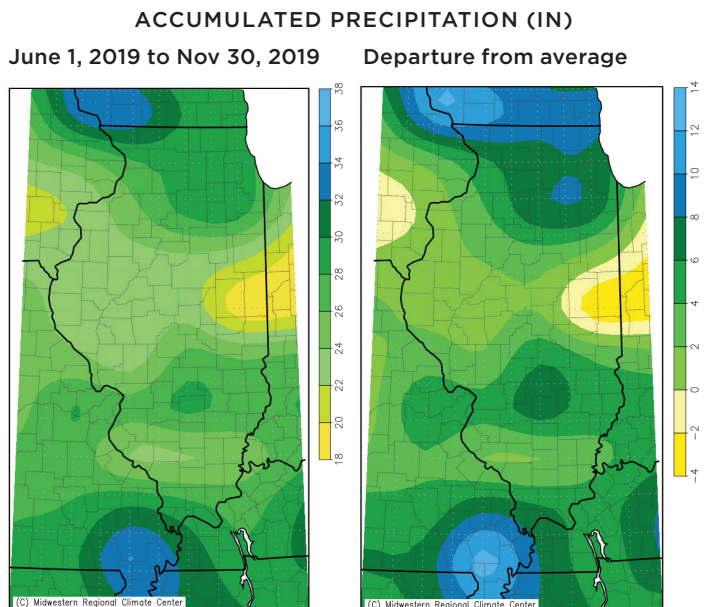
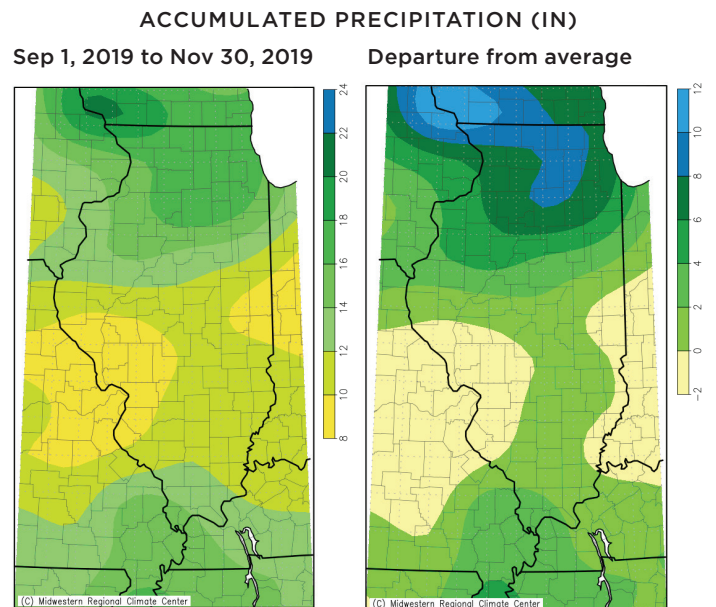
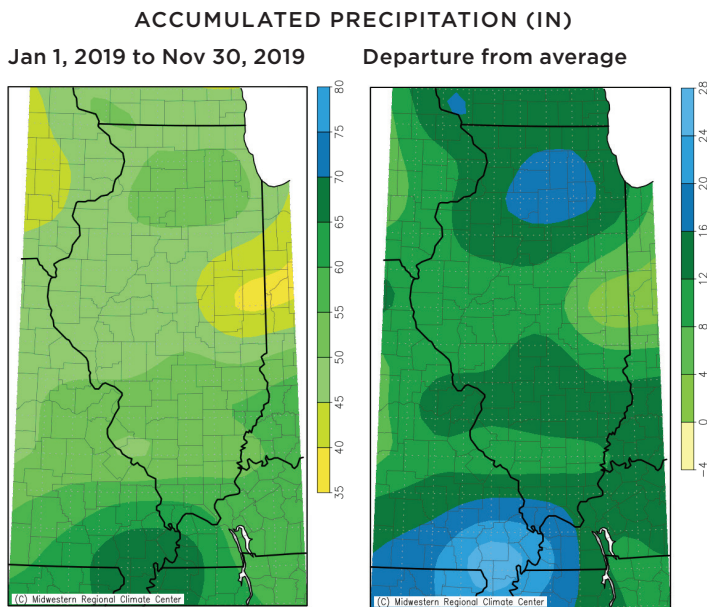
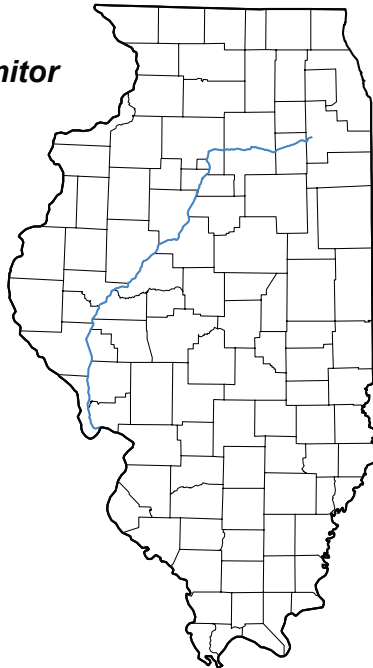


Figure 3. Illinois precipitation and precipitation departure from average for year to date (top left), last 3 months (top right), and last 6 months (bottom). Source: cli-MATE, Midwestern Regional Climate Center. <http://mrcc.illinois.edu/CLIMATE>, accessed on December 9, 2019.

U.S. Drought Monitor Illinois



November 26, 2019
(Released Wednesday, Nov. 27, 2019)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week 11-19-2019	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 08-27-2019	63.65	28.71	7.63	0.00	0.00	0.00
Start of Calendar Year 01-01-2019	100.00	0.00	0.00	0.00	0.00	0.00
Start of Water Year 10-01-2019	82.16	7.06	10.59	0.19	0.00	0.00
One Year Ago 11-27-2018	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate 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>

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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 November are presented in Table 2.

Winds were calmer than normal in November with a network average of 6.6 mph, 1.3 mph less than the long-term average but 0.5 mph higher than in October. ICN Bondville had the windiest month, averaging 10.5 mph. The highest reported wind gust was 53.3 mph, recorded on November 27 at the Snicarte station.

Air temperatures fell more than 16°F from October to an average of 36.4°. Temperatures were 6.5° cooler than the long-term average. Highs were in the 50s and 60s, while lows fell into the single digits. The warmest temperature was 67.5°, recorded at ICN Belleville on November 10. ICN Freeport was the only station reporting temperatures below freezing with the month's lowest temperature of -0.7° recorded on November 12.

Soil temperatures also fell in November to averages 15–16° lower than October and 2–4° cooler than the long-term average. Temperatures under bare soil dropped below freezing with network ranges of 29.5 to 61.4° at depths of 2 inches and 30.6 to 58.1° at 4 inches. Under sod, temperatures were reported from 33.6 to 56.5° at 4-inch depths and 36.4 to 54.8 at 8 inches.

Precipitation was slightly higher than normal with a network average of 3.15 inches or 0.08 inches more than the long-term average. However, southern stations reported significantly higher totals. ICN Dixon Springs recorded 6.91 inches for the month, 2.69 inches higher than normal for November, and the month's highest total.

Soil moisture remained high with values ending the month at or above field capacity for most stations. Levels at 2 inches increased 10% on average in November with the largest gains seen in the southern stations. Southern Illinois soil moisture increased at the 4-, 8-, and 20-inch depths while levels remained relatively steady in other regions. Soil moisture showed no overall changes at depths of 39 inches and greater.

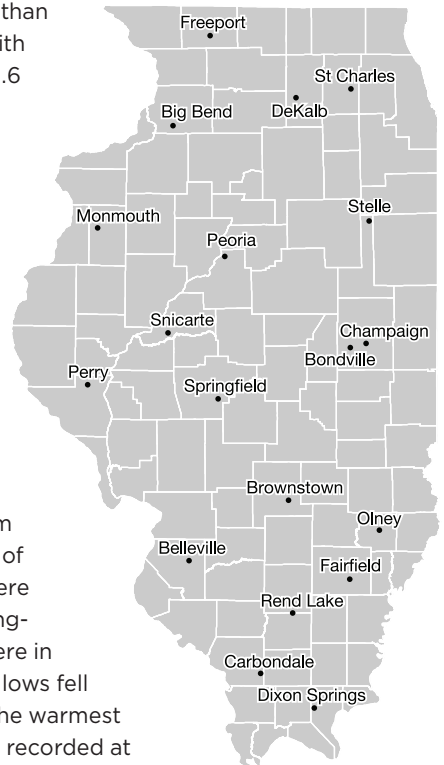


Figure 4. U.S. Drought Monitor report for Illinois. Source: U.S. Drought Monitor. Author: Brad Rippey, U.S. Department of Agriculture
<http://droughtmonitor.unl.edu>, accessed on December 9, 2019.

Table 2. Data from the Illinois Climate Network (ICN), November 2019

Station	Wind			Air Temperature (°F)			Total Solar Radiation (MJ/m²)
	Avg. Speed (mph)	Avg. Direction (°)	Max. Gust (mph)	Max.	Min.	Avg.	
Belleville	6.5	192.0	41.0	67.5	8.9	40.1	269.4
Big Bend	7.2	206.1	40.0	59.0	4.5	34.1	203.7
Bondville	10.5M	200.7M	49.0M	58.6M	0.5M	34.9M	259.3M
Brownstown	6.2	189.9	47.3	62.8	4.3	38.1	254.5
Carbondale	5.9	197.0	42.1	65.8	6.4	40.5	287.7
Champaign	4.1M	198.7M	36.7M	61.2M	0.0M	36.0M	233.1M
DeKalb	7.8	207.3	47.3	55.9	1.2	31.7	208.9
Dixon Springs	3.6	182.9	33.7	66.9	5.2	40.3	255.7
Fairfield	6.0M	180.5M	39.5M	65.0M	5.6M	38.8M	261.0M
Freeport	4.9	215.7	36.1	53.7	-0.7	31.0	171.7
Monmouth	10.4	204.6	49.8	59.0	3.6	34.2	244.9
Olney	5.1	174.7	40.8	63.8	4.1	38.5	257.3
Peoria	6.7	200.6	50.7	58.1	5.7	35.4	231.4
Perry	6.0	215.5	43.5	62.7	5.3	37.5	250.3
Rend Lake	4.3	185.8	43.0	66.5	5.3	39.9	262.2
Snicarte	8.7	200.1	53.3	61.6	5.4	36.2	256.2
Springfield	5.8	197.5	39.9	63.6	6.5	37.5	246.6
St. Charles	6.2	204.6	46.2	55.7	2.9	32.6	190.1
Stelle	9.8	205.6	51.9	57.2	1.1	34.1	219.2

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	2" under Bare Soil	4" under Bare Soil
Belleville	78.2	3.59	33.2	1.59	46.3	47.4	41.1	44.4
Big Bend	82.2	2.30	28.9	1.05	40.9	40.7	39.7	41.1
Bondville	84.0M	2.17M	30.2M	1.29M	40.9M	45.5M	40.1M	39.6M
Brownstown	77.3	4.69	31.1	1.42	47.5	47.9	41.6	40.8
Carbondale	81.6	5.18	34.6	1.61	48.3	47.1	61.5M	43.2
Champaign	79.3	2.17M	29.8M	1.24M	44.8M	46.5M	42.0M	40.9M
DeKalb	83.0	1.46	26.9	1.01	41.1	41.3	41.2	38.9
Dixon Springs	78.2	6.91	33.2	1.45	46.8	48.4	44.1	45.4
Fairfield	80.6M	4.75M	32.9M	1.40M	48.5M	49.2M	42.3M	44.6M
Freeport	81.2	2.78	25.6	0.87	43.6	42.2	36.1	35.9
Monmouth	81.4	1.84	28.8	1.24	41.3	41.1	39.9	37.6
Olney	77.8	5.61	31.7	1.40	44.5	45.5	42.8	41.9
Peoria	75.7	2.07	28.1	1.31	44.0	42.9	39.4	39.4
Perry	75.5	1.98	29.8	1.45	44.4	45.4	41.7	41.3
Rend Lake	74.2	4.72	31.8	1.52	44.5	45.8	44.4	43.1
Snicarte	73.9	1.74	28.2	1.53	42.0	43.2	40.7	42.0
Springfield	76.1	2.01	30.1	1.40	44.3	44.3	41.4	40.8
St. Charles	80.2	2.17	26.8	1.00	42.0	43.4	39.0	37.6
Stelle	80.5	1.63	28.4	1.20	41.8	42.6	40.0	38.4

M = Missing data.

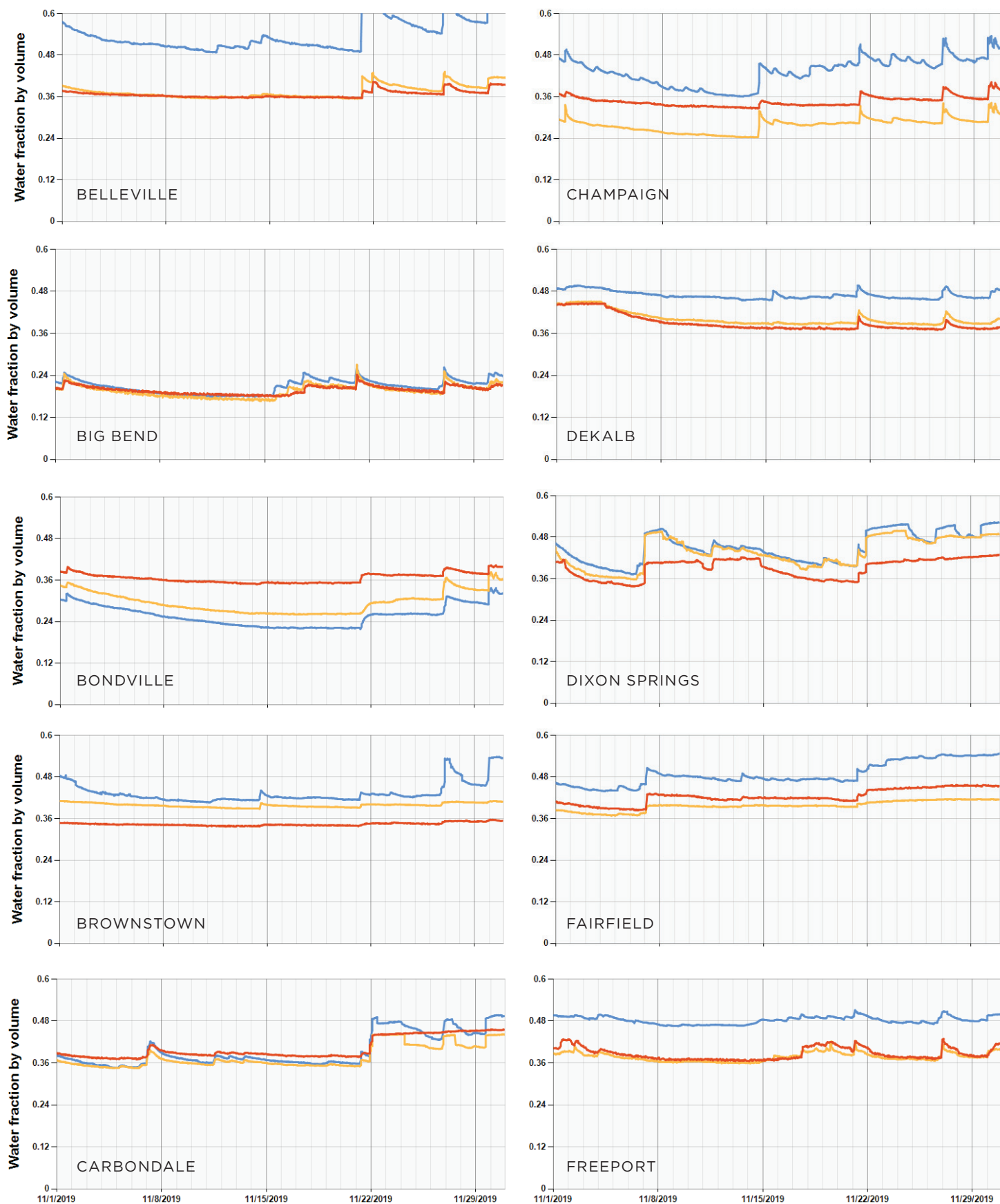


Figure 5. November soil moisture levels at ICN stations: — 2 in, — 4 in, and — 8 in

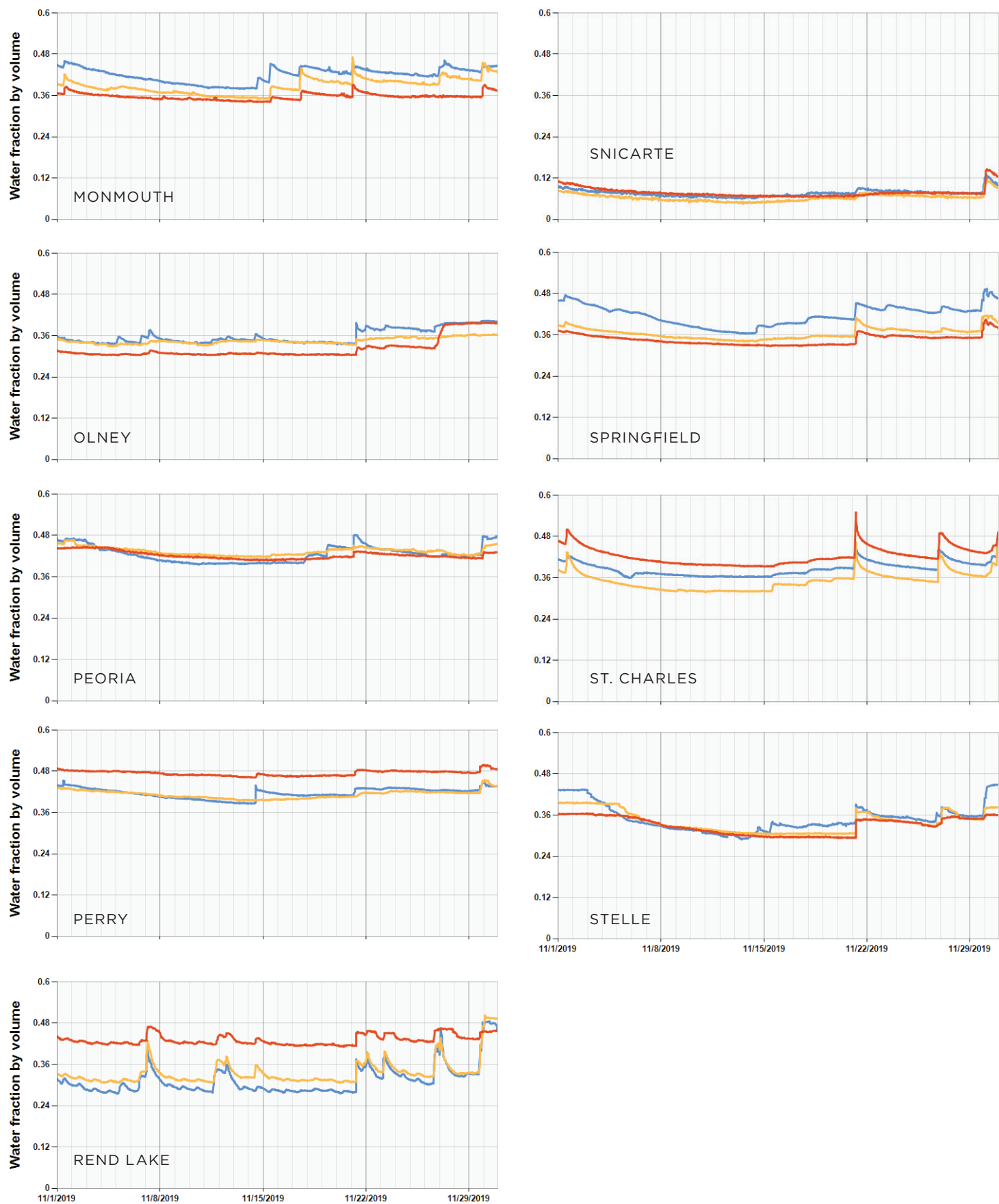


Figure 5. November soil moisture levels at ICN stations: — 2 in, — 4 in, and — 8 in

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 NWS. Flood stage is defined locally for each gage location.

Water levels of the Illinois River and the Mississippi River exceeded the local flood stages at several locations in early November.

Provisional monthly mean flows for 26 streamgaging stations located throughout Illinois are shown in Table 4. Mean values posted by the USGS are listed if available; otherwise, daily mean discharge data posted by the USGS are used to estimate the mean flow for the month. Long-term mean flows for each month are published by the USGS. The month's median flow for each station listed in Table 4 was determined by ranking the November mean flow for each year of record, and selecting the middle value, 50 percent exceedence probability.

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 November (approximately 310 percent of the median) and above the mean for November (approximately 175 percent of the mean). Monthly mean discharge values ranged from normal to much above normal for November. The monthly mean flow recorded at the Fox River at Dayton streamgage this month was the second highest for the month of November in the period of record of the gage. The November 2019 monthly mean streamflow of the Rock River at Rockton was the highest recorded for the month of November in the period of record of the streamgage.

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-October water levels at 22 reservoirs for which levels were reported last month and this month, reported end-of-November water levels were lower at 7 reservoirs, higher at 13 reservoirs, and about the same as last month at 2 reservoirs. For the 23 reservoirs with measurements reported at the end of November, water levels were below normal target pool or spillway level at 3 reservoirs, above normal target pool or spillway level at 13 reservoirs, and at about full pool level at 7 reservoirs.

Major Reservoirs. Compared to water levels at the end of October, at the end of November the water level at Lake Shelbyville was 0.2 feet higher, Carlyle Lake was 1.7 feet lower, and Rend Lake was 0.9 feet higher. At the end of November, Lake Shelbyville was 1.0 foot above the December 1 target level, Carlyle Lake was 2.5 feet above the December 1 target level, and Rend Lake was 2.2 feet above the spillway level. (Target operational levels decrease seasonally in December at Lake Shelbyville and Carlyle Lake.)

Great Lakes. Current month mean and end-of-month values are provisional and are relative to International Great Lakes Datum 1985. The November 2019 mean level for Lake Michigan was 581.6 feet. The monthly mean level one year ago (November 2018) was 580.3 feet. The long-term average lake level for November is 578.7 feet, based on 1918-2018 data. In this period of record, the lowest mean level for Lake Michigan for November occurred in 1964 at 576.3 feet, and the highest mean level for November occurred in 1986 at 582.0 feet. The month-end level of Lake Michigan was 581.6 feet. All values are provided by the U.S. Army Corps of Engineers Detroit District.

Table 3. Peak Stages for Major Rivers during November 2019

River	Station	River mile*	Flood stage (feet)*	Peak stage (feet)**	Date
Illinois	Morris	263.1	16	15.1	01
	La Salle	224.7	20	24.6	01
	Peoria	164.6	18	20.1	04
	Havana	119.6	14	17.8	06-07
	Beardstown	88.6	14	17.3	07
	Hardin	21.5	25	25.4	03-07
Mississippi	Dubuque	579.9	17	16.3	01
	Keokuk	364.2	16	13.8	01-02
	Quincy	327.9	17	17.4	01
	Grafton	218.0	18	20.2	01-02
	St. Louis	180.0	30	27.8	02
	Chester	109.9	27	28.9	02
Ohio	Thebes	43.7	33	31.6	04
	Cairo	2.0	40	35.1	05-06

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, November 2019

Station	Drainage area (sq mi)	Years of record	2019 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	6363	83	11,553	3,598	3,389	much above normal	**	30
Rock River near Joslin	9549	75	14,670	5,303	4,842	much above normal	4	30
Pecatonica River at Freeport	1326	99	2,307	769	679	much above normal	3	30
Green River near Geneseo	1003	80	1,192	455	329	above normal	13	30
Edwards River near New Boston	445	80	343	168	83	above normal	13	30
Kankakee River at Momence	2294	100	2,892	1,582	1,270	much above normal	9	30
Iroquois River near Chebanse	2091	93	1,525	983	484	above normal	22	30
Fox River at Dayton	2642	100	5,006	1,519	1,322	much above normal	2	30
Vermilion River at Pontiac	579	73	410	250	64	above normal	20	30
Spoon River at Seville	1636	100	1,587	615	329	above normal	11	30
LaMoine River at Ripley	1293	94	653	532	198	above normal	26	30
Bear Creek near Marceline	349	73	178	156	25	above normal	24	30
Mackinaw River near Congerville	767	72	692	297	70	above normal	12	30
Salt Creek near Greenview	1804	75	1,127	839	283	above normal	23	30
Sangamon River at Monticello	550	105	148	252	83	normal	41	27
South Fork Sangamon near Rochester	867	68	514	302	78	above normal	19	30
Illinois River at Valley City	26,743	78	40,500	14,790	11,514	much above normal	4	30
Macoupin Creek near Kane	868	88	166	341	92	normal	39	30
Vermilion River near Danville	1290	95	314	625	301	normal	48	30
Kaskaskia River at Vandalia	1940	47	847	923	633	normal	41	30
Shoal Creek near Breese	735	73	476	332	127	above normal	20	30
Embarras River at Ste. Marie	1516	103	463	739	326	normal	43	30
Skillet Fork at Wayne City	464	97	538	267	90	above normal	16	30
Little Wabash below Clay City	1131	102	794	586	245	above normal	11	30
Big Muddy at Plumfield	794	46	232	401	130	normal	35	30
Cache River at Forman	244	93	376	195	87	above normal	18	30

Notes:

Source streamflow data are obtained from the U.S. Geological Survey.

N/A = not available (due to ice or equipment problems).

Much below normal flow = 90-100% chance of exceedence.

Below normal flow = 70-90% chance of exceedence.

Normal flow = 30-70% chance of exceedence.

Above normal flow = 10-30% chance of exceedence.

Much above normal flow = 0-10% chance of exceedence.

*As reported in U.S. Geological Survey (USGS) Water Resources Data, Illinois, Water Year 2016.

** Highest monthly mean flow for November in the period of record of the streamgage.

Table 5. Reservoir Levels in Illinois, November 2019

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	October reported pumpage (million gallons)
Altamont	Effingham	582.0	+0.3	+0.7	-2.3	36	5.9
Bloomington	McLean	719.5	+0.2	+0.7	-3.7	33	N/A
Carlinville	Macoupin	571.1	+0.1	+0.1	-1.0	34	26.3
Carlyle ⁽¹⁾	Clinton	445.0	+2.5	-1.7	+3.1	41	N/A
Decatur ^(1,3)	Macon	614.3	+0.2	-1.7	+0.5	36	1,040.6
Evergreen ⁽⁴⁾	Woodford	720.0	0.0	+0.4	-3.1	29	N/A
Glenn Shoals ⁽²⁾	Montgomery	590.0	0.0	-0.3	-0.6	25	w/Hillsboro
Highland	Madison	500.0	+1.6	+1.3	-0.3	31	34.2
Hillsboro ⁽²⁾	Montgomery	589.0	N/A	N/A	-0.2	24	36.5
Jacksonville ⁽²⁾	Morgan	644.0	N/A	N/A	-0.5	14	w/Mauvaise Terre
Kinkaid	Jackson	420.0	-1.3	-0.9	-0.7	31	51.4
Lake of Egypt	Williamson	500.0	N/A	N/A	-0.9	25	N/A
Mattoon	Coles	632.0	0.0	0.0	-0.8	26	w/Paradise
Mauvaise Terre ⁽²⁾	Morgan	588.5	N/A	N/A	-0.1	18	no meter
Mt. Olive (new)	Macoupin	600.0	N/A	N/A	-0.2	10	w/Mt. Olive (old)
Mt. Olive (old)	Macoupin	654.0	0.0	N/A	-0.8	21	N/A
Pana	Christian	641.6	+0.1	+0.1	-1.6	35	N/A
Paradise	Coles	685.0	0.0	0.0	-0.4	29	66.5
Paris (east)	Edgar	660.0	+0.3	+0.2	-1.0	33	Not PWS
Paris (west)	Edgar	660.1	+0.3	+0.2	+0.1	23	w/Paris (east)
Raccoon ⁽¹⁾	Marion	477.0	+0.8	-0.1	N/A	N/A	92.8
Rend	Franklin	405.0	+2.2	+0.9	+0.8	41	N/A
Salem ⁽³⁾	Marion	546.5	-0.2	-0.2	-0.7	24	24.6
Shelbyville ⁽¹⁾	Shelby	599.7	+1.0	+0.2	+1.0	41	Not PWS
Sparta ⁽³⁾	Randolph	497.0	0.0	-0.7	-1.2	23	N/A
Spring ^(3,4)	McDonough	654.0	N/A	N/A	-0.7	36	51.3
Springfield ^(1,3)	Sangamon	560.0	0.0	-0.9	-1.6	36	528.2
Taylorville	Christian	590.0	-0.1	+0.5	-0.9	26	50.9
Vermilion ⁽⁴⁾	Vermilion	581.7	+0.1	+0.2	-0.3	34	205.1

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 December 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.

Groundwater Information

— JENNIE ATKINS

Comparison to Period of Record. Shallow groundwater levels in 14 observation wells, which are remote from pumping centers, were above normal for the month of November. Levels averaged 2.05 feet above normal and ranged from 0.50 feet below to 6.60 feet above normal levels (Table 6).

Comparison to October 2019. Shallow groundwater levels were above those of the previous month. Levels averaged 0.34 feet above and ranged from 2.25 feet below to 3.34 feet above October levels.

Comparison to November 2018. Shallow groundwater levels in November were above levels from one year ago. Levels averaged 0.36 feet above and ranged from 2.57 feet below to 3.23 feet above November 2018 levels.

Table 6. Month-End Shallow Groundwater Level Data Sites, November 2019

No.	Well name	County	Well depth (feet)	This month's reading (depth to water, feet)	Deviation from			
					15-year avg. level (feet)	Period of record avg. (feet)	Previous month (feet)	Previous year (feet)
1	Galena	JoDavies	25.00	17.52	2.69	3.66	-0.50	-0.32
2	Mt. Morris	Ogle	55.00	13.45	6.15	6.50	0.07	0.69
3	Crystal Lake	McHenry	18.00	3.67	1.22	1.82	-0.25	-0.08
4	Fermi Lab	DuPage	15.00	3.45	3.41	3.46	-2.25	1.94
5	Good Hope	McDonough	30.00	5.60	2.57	3.29	0.83	-0.68
6	Snicarte	Mason	42.00	37.45	-0.62	0.10	-0.24	-0.56
7	Coffman	Pike	28.00	13.44	0.52	-0.40	0.45	3.23
8	Greenfield	Greene	20.70	15.06	0.22	-0.50	-0.23	2.22
9	Janesville	Coles	11.00	5.40	-0.09	-0.02	1.23	-0.48
10	St. Peter	Fayette	15.00	2.94	-0.82	-0.30	N/A	-2.10
11	SWS #2	St. Clair	80.00	11.54	1.77	3.64	1.67	0.30
12	Boyleston	Wayne	23.00	N/A	N/A	N/A	N/A	N/A
13	Sparta	Randolph	27.00	2.23	4.55	6.60	N/A	1.82
14	SE College	Saline	11.00	4.34	1.29	1.04	2.44	1.58
15	Bondville	Champaign	21.00	5.38	0.44	-0.18	3.34	-2.57
					1.66	2.05	0.34	0.36

Notes: N/A = Data not available.

Data sources for this publication include the following:

CPC - Climate Prediction Center, <http://www.cpc.ncep.noaa.gov/index.php>

ISWS - Illinois State Water Survey, <http://www.isws.illinois.edu>

MRCC - Midwestern Regional Climate Center, <http://mrcc.illinois.edu>

NCDC - National Climatic Data Center, <http://www.ncdc.noaa.gov>

NWS - National Weather Service, <http://www.nws.noaa.gov>

USACE - U.S. Army Corps of Engineers, <http://rivergages.com>, <https://www.lre.usace.army.mil>

USGS - U.S. Geological Survey, <http://waterdata.usgs.gov/il/nwis>

WARM - Water and Atmospheric Resources Monitoring Program, <http://www.isws.illinois.edu/warm>

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