

ILLINOIS WATER AND CLIMATE SUMMARY

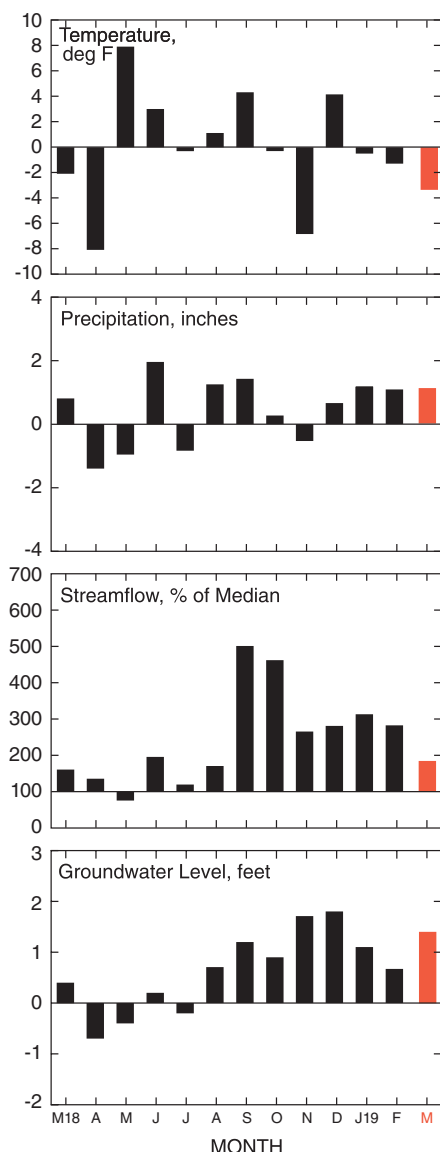


Figure 1. Statewide departures from normal.

MARCH 2019 OVERVIEW

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

Air temperatures averaged 38.0°F in March, 3.3° below the long-term average (Figure 1). The southeast crop reporting district (CRD) was the warmest with an average of 42.8°. The lowest regional temperature was 34.1°, reported by the northwest CRD.

Precipitation averaged 4.01 inches, 1.05 inches above the long-term average (Figure 1). The west-southwest CRD was the wettest with an average of 5.16 inches. The driest was the northwest CRD with 2.29 inches.

Mean provisional streamflow aggregated statewide was above the long-term median flow for March, about 190% of median (Figure 1). Monthly mean discharge values ranged from normal to much above normal for March. The Illinois River crested above the local flood stages at many locations in March. The Ohio River remained above the flood stage at Cairo throughout March. The Mississippi River was above the local flood stages at all gage stations along the Illinois border at the end of the month.

Water surface levels at the end of March were below the full pool or target level at 2 of 26 reporting reservoirs. At the end of March, Lake Shelbyville was 2.3 feet above the April 1 target level, Carlyle Lake was 4.9 feet above the April 1 target level, and Rend Lake was 5.2 feet above the spillway level. The Lake Michigan mean level was above its long-term mean for the month.

Shallow groundwater levels were above normal this month with an average departure of 1.40 feet (Figure 1). An increase of 0.73 feet in departures was observed from the deviation in normal groundwater levels between February and March. Levels averaged 1.35 feet above February 2019 and 1.27 feet above March 2018 levels.

Weather/Climate Information

— BRIAN KERSCHNER

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

March in Illinois was cooler and wetter than average. **Temperatures** averaged 38.0°F, 3.3° below the long-term average (Table 1, Figure 2). The first week of March brought a notable arctic outbreak in which temperatures were 15° to 25° below average. During this period three stations recorded minimum temperatures of -10° or colder. The month's lowest reading of -12°F was reported at Little Red School House (Cook County) on March 5. In contrast, the month's highest reported temperature was 76°F at Dixon Springs (Pope County) on March 13.

Precipitation averaged 4.01 inches in March, 1.05 inches above the long-term average (Table 1, Figure 2). The heaviest fell in portions of central and west-central Illinois, where 4 to 6 inches of precipitation was common. The highest total was reported at Jerseyville (Jersey County) with 6.41 inches. Monthly precipitation for Illinois has been above average since December 2018, contributing to widespread flooding on local streams and rivers, with notable and ongoing flooding concerns along the Mississippi River.

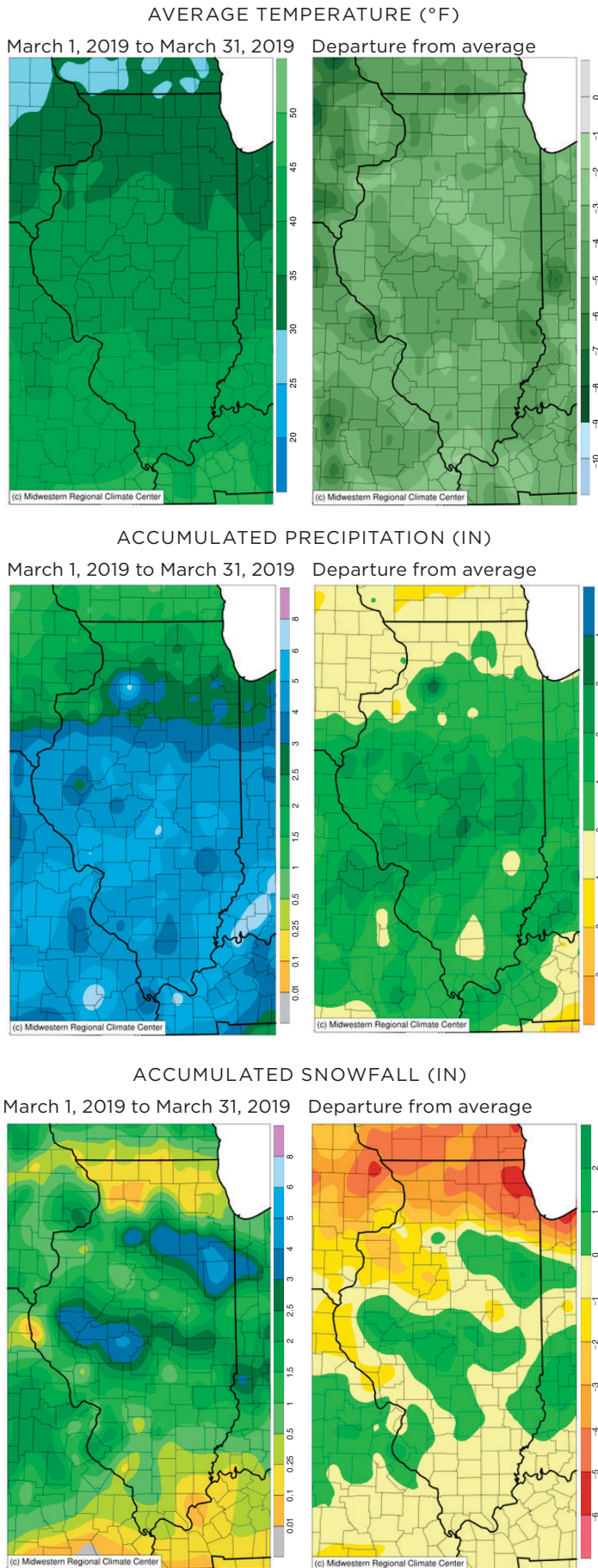
Table 1. Temperature and Precipitation for March 2019

	Temp. (°F)	Departure from long- term avg. (1981–2010)	Precip. (in)	Departure from long- term avg. (1981–2010)
Illinois	38.0	-3.3	4.01	+1.05
CRD 1 (northwest)	34.3	-3.2	2.29	-0.15
CRD 2 (northeast)	34.1	-3.5	2.46	+0.10
CRD 3 (west)	37.4	-3.2	4.19	+1.51
CRD 4 (central)	37.4	-2.9	4.27	+1.59
CRD 5 (east)	36.5	-3.3	3.81	+1.15
CRD 6 (west southwest)	39.2	-3.7	5.16	+2.24
CRD 7 (east southeast)	39.2	-3.8	4.90	+1.63
CRD 8 (southwest)	42.6	-3.3	4.45	+0.62
CRD 9 (southeast)	42.8	-3.0	4.62	+0.46

Data from NOAA's National Centers for Environmental Information, accessed 4/9/2019.

Figure 2. Illinois temperature, precipitation, snowfall, and their departures from average for March 2019.

Source: cli-MATE, Midwest Regional Climate Center. <http://mrcc.illinois.edu/CLIMATE>, accessed on April 9, 2019.



Snow occurred statewide during March, lasting only a short time (Figure 2). Two snow maximums were present, one centered near Springfield, and another centered just south of Kankakee. In both regions, 3 to 6 inches of accumulation were reported.

Severe weather: The NOAA Storm Prediction Center recorded 12 severe weather reports for March, 7 for hail,

and 5 for wind. (Multiple reports can be generated for a single event.)

Drought: Illinois remained drought free. In the U.S. Drought Monitor's March 26 map, no part of the state was listed as in drought or as abnormally dry (Figure 4).

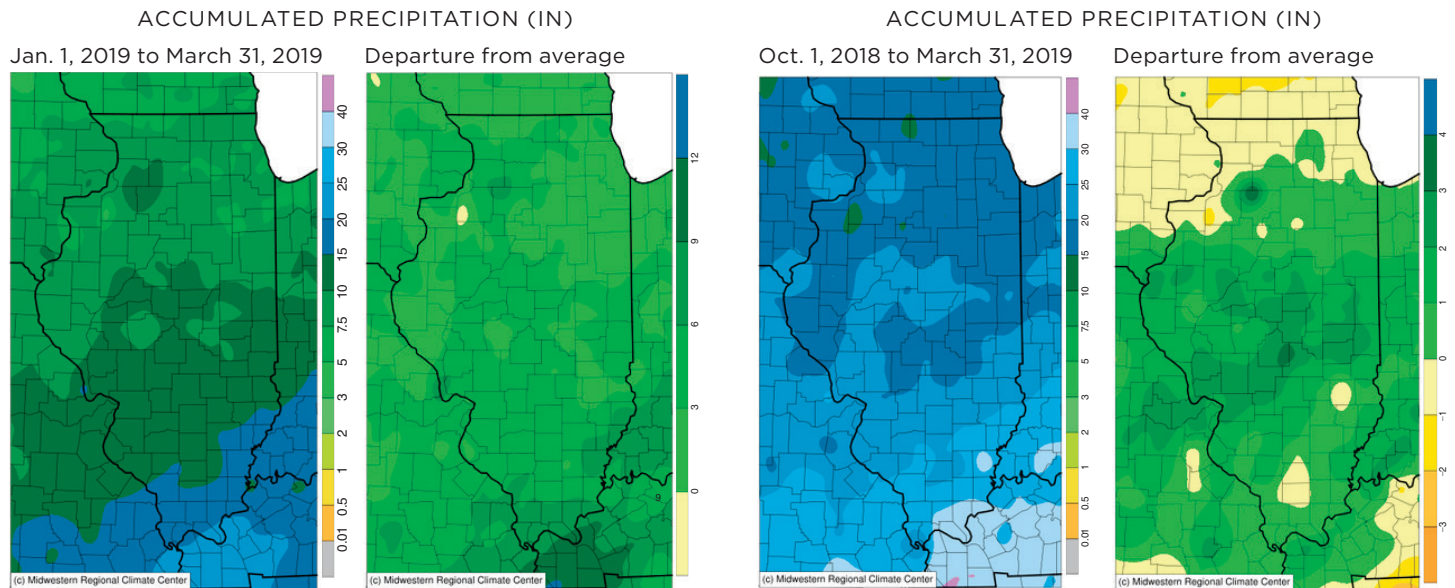
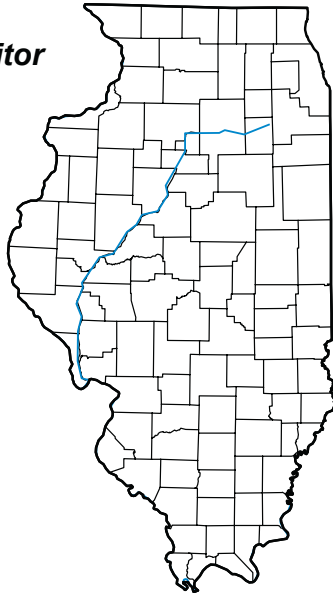


Figure 3. Illinois precipitation and precipitation departure from average for year to date (left) and last 6 months (right). Source: cli-MATE, Midwestern Regional Climate Center. <http://mrcc.illinois.edu/CLIMATE>, accessed on April 9, 2019.

U.S. Drought Monitor Illinois



March 26, 2019

(Released Thursday, Mar. 28, 2019)

Valid 8 a.m. EDT

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 03-19-2019	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago 12-25-2018	100.00	0.00	0.00	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 09-25-2018	96.92	3.08	0.00	0.00	0.00	0.00
One Year Ago 03-27-2018	99.40	0.60	0.00	0.00	0.00	0.00

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements.

Author:

Eric Luebehusen
U.S. Department of Agriculture

Illinois Climate Network (ICN)

— JENNIE ATKINS

The Illinois Climate Network (ICN) consists of 19 stations across the state that collect hourly weather and soil information. ICN data for March are presented in Table 2.

Wind speeds averaged 8.2 mph in March, 0.4 mph higher than the network's long-term average. ICN Bondville was the windiest station of the month with an average of 12.1 mph. The highest measured wind gust was 52.6 mph, recorded on March 14 at ICN Snicarte.

Air temperatures were slightly cooler than normal with an average of 38.2°, 4.3° below the long-term average. The month began with very cold conditions as temperatures fell below zero for stations in central and northern Illinois. Temperatures quickly rose and highs were in the 50s through 70s for most of the rest of March. The lowest recorded temperature was -7.0°, measured at ICN Freeport on March 4. The highest temperature was 76.7° from ICN Dixon Springs on March 13.

Soil temperatures rose for most of March, ending the month with averages in the mid-40s. Under bare soil, temperatures ranged from 11.6 to 73.6° at depths of 2 inches and 19.0 to 63.9°F at 4 inches. Temperatures under sod ranged from 23.6 to 62.2° at 4 inches and 25.3 to 56.9° at 8 inches.

Precipitation was higher than normal for most ICN stations in March. The network average was 4.02 inches for the month, 1.31 inches greater than the long-term average. The highest monthly total was 5.94 inches, recorded at ICN Brownstown.

Soil moisture information will return to the IWCS in spring 2019.

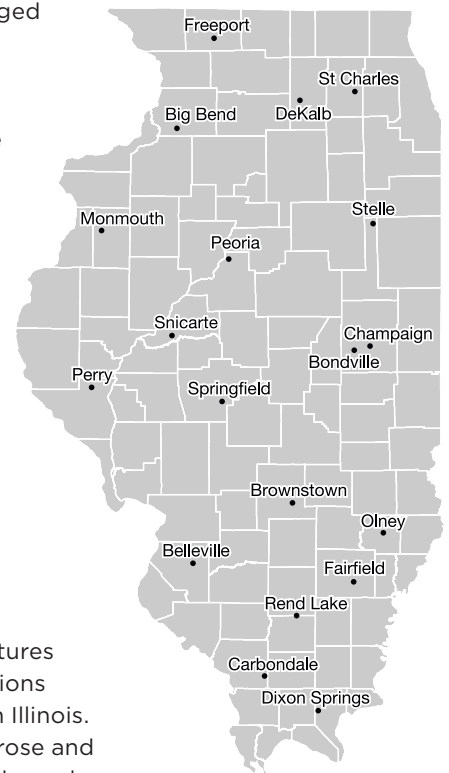


Figure 4. U.S. Drought Monitor report for Illinois. Source: U.S. Drought Monitor. Author: Eric Luebehusen, USDA.
<http://droughtmonitor.unl.edu>, accessed on April 9, 2019.

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

Station	Wind			Air Temperature (°F)			Total Solar Radiation (MJ/m²)
	Avg. Speed (mph)	Avg. Direction (°)	Max. Gust (mph)	Max.	Min.	Avg.	
Belleville	8.1	186.9	43.1	69.5	4.4	41.9	450.9
Big Bend	8.9	210.1	39.7	65.9	-2.5M	35.6	472.9
Bondville	12.1	193.3	51.9	67.7	-3.9	35.8	448.2
Brownstown	7.9	183.3	45.5	69.3	0.5	39.6	432.2
Carbondale	7.3	209.5	42.6	71.0	7.4	43.0	449.6
Champaign	5.8	191.4	36.7	69.7	-2.7M	36.7	417.3
DeKalb	9.9	209.3	48.2	64.2	-5.3	33.1	453.7
Dixon Springs	5.0	191.0	41.4	76.7	10.4	45.0	407.7
Fairfield	7.4	181.0	38.5	71.5	4.2	41.0	436.5
Freeport	6.4	222.1	33.7	63.4	-7.0	32.9	467.6
Monmouth	11.6	211.3	46.9	67.3	-3.4	35.4	487.4
Olney	6.4	179.6	44.8	72.0	3.6	40.4	429.7
Peoria	8.8	203.2	44.2	70.1	-1.8M	37.3	457.3
Perry	7.4	216.3	44.5	71.9	-1.3	38.9	443.7
Rend Lake	5.8	193.4	34.3	72.8	7.4	42.7	424.1
Snicarte	10.8	192.2	52.6	72.1	-1.1	38.3	473.2
Springfield	6.8	187.7	38.6	70.6	-0.8	39.0	448.0
St. Charles	7.9	206.9	39.4	65.0	-4.3	33.7	412.0
Stelle	11.8	200.2	49.7	67.0	-2.7	34.5	436.9

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	73.8	4.03	33.3	2.63	42.7	42.0	45.2	41.2
Big Bend	71.8	2.31	26.6	2.47	36.5	34.8	39.2	37.1
Bondville	78.4	4.68	29.3	2.20	37.2	39.7	41.8	39.3
Brownstown	70.3	5.94	30.2	2.46	43.1	41.1	42.4	42.3
Carbondale	70.1	4.08	32.7	2.85	46.2	44.4	45.1	45.3
Champaign	73.5	5.07	28.3	2.24	41.1	41.0	41.4	41.2
DeKalb	77.9	2.48	26.4	2.16	35.2	33.7	37.5	38.6
Dixon Springs	65.2	5.82	32.6	2.68	46.2	46.2	46.2	45.4
Fairfield	69.0	4.04	30.9	2.63	43.4	43.2	45.1	42.7
Freeport	73.2	1.75	24.6	2.29	38.5	36.3	34.8	34.7
Monmouth	74.6	3.52	27.5	2.45	34.3	32.6	36.9	36.2
Olney	70.7	4.32	30.9	2.51	43.4	43.4	44.1	44.6
Peoria	66.1	4.31	26.1	2.63	36.4M	32.9	39.1	37.8
Perry	72.5	4.44	30.0	2.48	38.7	38.7	42.0	41.3
Rend Lake	68.4	4.86	32.1	2.69	44.6	44.8	44.9	45.1
Snicarte	68.5	4.27	28.2	2.73	41.1	40.6	41.9	39.8
Springfield	71.4	4.60	29.9	2.48	41.1	39.5	41.9	41.3
St. Charles	70.7	2.48	24.3	2.19	35.2	34.5	36.3	36.8
Stelle	75.0	3.34	26.9	2.20	35.4	34.6	36.7	36.4

M = Missing data.

Other Precipitation Networks

— ERIN BAUER

Imperial Valley. The average network precipitation for March 2019 was 4.11 inches, which is well above the previous 26-year network average (Figure 5a). The largest monthly gage total was in the northern portion of the network. Monthly gage totals varied 1.96 inches across the network, from 3.32 inches at site #23, between Mason City and New Holland, to 5.28 inches at site #2, north of Manito. The 1981–2010 30-year average precipitation amounts for March at Havana and Mason City are 2.81 and 2.49 inches, respectively. The March 2019 network average of 4.11 inches is 158 percent of the 26-year (1993–2017) IVWA March network average of 2.19 inches.

Cook County. During March 2019, precipitation in Cook County was below average (Figure 5b). Precipitation was highest in the southwestern corner of the network. The lowest precipitation was in the northern portion of the county. Precipitation values ranged from 0.87 inches at site #2 (Winnetka, near Hibbard St. and Willow Rd.) to 3.16 inches at site #20 (Orland Park, near W. 167th St. and 108th Ave.). Across the network, precipitation varied 2.29 inches. The network average of 2.04 inches is about 86% of the 29-year (1990–2018) March network average of 2.37 inches.

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.

In March, the Illinois River crested above the local flood stages at LaSalle and from Peoria downstream to its confluence at the Mississippi River. The Illinois River remained above local flood stages at Havana and Beardstown the entire month. At the end of March, the Mississippi River was above the local flood stages at all gage locations along the Illinois border. The Ohio River exceeded the local flood stage at Cairo during the entire month.

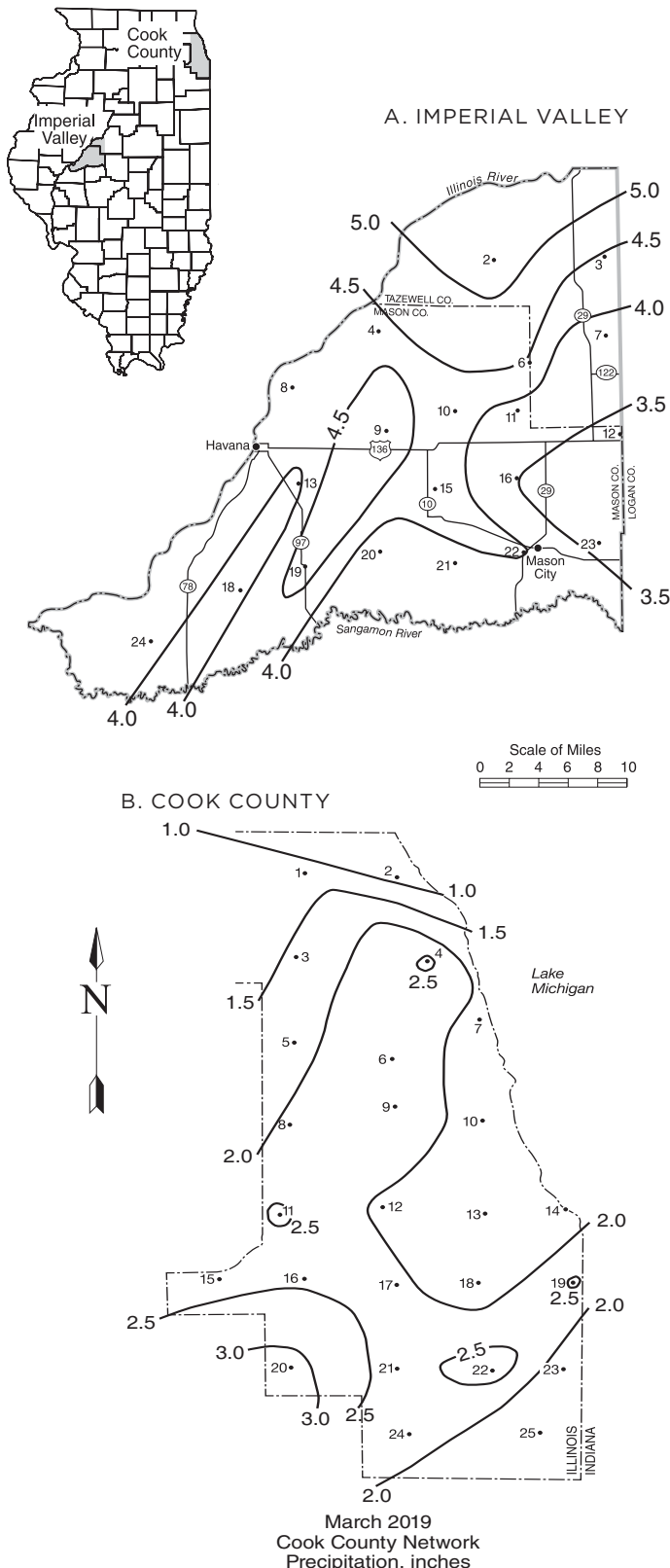


Figure 5. Precipitation totals (inches) for (A) Imperial Valley Water Authority and (B) Cook County raingage networks March 2018

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 March mean flow for each year of record and selecting the middle value, 50% 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.)

Table 3. Peak Stages for Major Rivers during March 2019

River	Station	River mile*	Flood stage (feet)*	Peak stage (feet)**	Date
Illinois	Morris	263.1	16	11.3	15
	La Salle	224.7	20	22.3	16
	Peoria	164.6	18	19.0	18–21
	Havana	119.6	14	18.4	31
	Beardstown	88.6	14	20.1	31
	Hardin	21.5	25	33.2	31
Mississippi	Dubuque	579.9	17	20.2	31
	Keokuk	364.2	16	20.6	31
	Quincy	327.9	17	25.6	31
	Grafton	218.0	18	27.9	31
	St. Louis	180.0	30	36.8	31
	Chester	109.9	27	37.6	31
	Thebes	43.7	33	37.9	21–26
Ohio	Cairo	2.0	40	56.5	01–02

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, March 2019

Station	Drainage area (sq mi)	Years of record	2018 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	82	>16,500	7,372	7,873	much above normal	N/A	23
Rock River near Joslin	9,549	74	>27,000	11,100	10,002	much above normal	N/A	26
Pecatonica River at Freeport	1,326	98	4,909	1,764	1,676	much above normal	2	31
Green River near Geneseo	1,003	79	2,284	1,080	903	much above normal	9	31
Edwards River near New Boston	445	79	778	526	415	above normal	21	31
Kankakee River at Momence	2,294	100	3,522	3,343	3,235	normal	40	31
Iroquois River near Chebanse	2,091	93	2,695	3,169	2,746	normal	52	31
Fox River at Dayton	2,642	98	5,800	3,365	2,901	above normal	12	26
Vermilion River at Pontiac	579	73	892	755	672	above normal	27	31
Spoon River at Seville	1,636	100	3,225	1,719	1,269	above normal	14	31
LaMoine River at Ripley	1,293	94	2,952	1,308	888	above normal	14	31
Bear Creek near Marceline	349	73	871	371	247	above normal	15	31
Mackinaw River near Congerville	767	68	1,408	942	719	above normal	19	31
Salt Creek near Greenview	1,804	75	3,558	2,094	1,706	above normal	14	31
Sangamon River at Monticello	550	105	994	710	606	above normal	24	31
South Fork Sangamon near Rochester	867	68	2,170	985	693	much above normal	10	31
Illinois River at Valley City	26,743	78	54,500	34,380	30,281	above normal	11	30
Macoupin Creek near Kane	868	88	2,276	870	568	much above normal	10	31
Vermilion River near Danville	1,290	95	2,446	1,723	1,437	above normal	28	31
Kaskaskia River at Vandalia	1,940	47	4,186	2,935	2,457	above normal	24	31
Shoal Creek near Breese	735	73	1,534	949	708	above normal	21	31
Embarras River at Ste. Marie	1,516	103	3,438	2,179	1,887	above normal	22	31
Skillet Fork at Wayne City	464	97	1,101	817	726	above normal	24	31
Little Wabash below Clay City	1,131	102	2,330	1,742	1,450	above normal	30	31
Big Muddy at Plumfield	794	46	1,419	1,353	1,157	normal	40	31
Cache River at Forman	244	93	1,152	622	440	above normal	14	31

Notes:

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

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

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

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.

Mean provisional flow aggregated statewide, using the available monthly mean data shown this month in Table 4, was above the median value for March (approximately 190% of the median) and above the mean for March (approximately 160% of the mean). Monthly mean discharge values ranged from normal to much above normal for March. Because of ice conditions, some streamflow data this month are unavailable and are partly approximated at some stations.

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-February water levels at 24 reservoirs for which levels were reported last month and this month, reported end-of-March water levels were lower at one reservoir, higher at 19 reservoirs, and about the same as at the end of last month at 4 reservoirs. For the 26 reservoirs with measurements reported at the end of March, water levels were below normal target pool or spillway level at 2 reservoirs, above normal target pool or spillway level at 20 reservoirs, and at about the full pool level at 4 reservoirs.

Major Reservoirs. Compared to water levels at the end of February, at the end of March the water level at Lake Shelbyville was 2.8 feet higher, Carlyle Lake was 2.4 feet

Table 5. Reservoir Levels in Illinois, March 2019

Reservoir	County	Normal pool or target level (feet)	Current level difference from normal or target (feet)	Monthly change (feet)	Average difference from normal or target (feet)	Years of record	February reported pumpage (million gallons)
Altamont	Effingham	582.0	+0.2	+0.1	-0.6	35	5.2
Bloomington	McLean	719.5	+0.5	0.0	-0.7	32	N/A
Carlinville	Macoupin	571.1	+0.2	+0.1	-0.1	32	21.1
Carlyle ⁽¹⁾	Clinton	444.0	+4.9	+2.4	+1.2	41	N/A
Decatur ^(1,3)	Macon	612.5	+0.5	+0.7	+0.9	35	913.3
Evergreen ⁽⁴⁾	Woodford	720.0	+0.5	+0.5	-1.0	28	N/A
Glenn Shoals ⁽²⁾	Montgomery	590.0	+0.8	+0.8	+0.2	24	w/Hillsboro
Highland	Madison	500.0	+0.2	+0.3	+0.2	30	36.5
Hillsboro ⁽²⁾	Montgomery	589.0	N/A	N/A	+0.1	24	33.6
Jacksonville ⁽²⁾	Morgan	644.0	+0.1	N/A	-0.1	16	w/Mauvaise Terre
Kinkaid	Jackson	420.0	-0.2	+0.1	+0.2	30	54.8
Lake of Egypt	Williamson	500.0	+0.5	+0.2	+0.3	25	N/A
Mattoon	Coles	632.0	N/A	N/A	-0.1	25	w/Paradise
Mauvaise Terre ⁽²⁾	Morgan	588.5	+0.1	N/A	+0.1	21	no meter
Mt. Olive (new)	Macoupin	600.0	0.0	0.0	-0.4	14	w/Mt. Olive (old)
Mt. Olive (old)	Macoupin	654.0	0.0	0.0	-0.2	20	4.8
Pana	Christian	641.6	+0.2	+0.1	-0.3	35	N/A
Paradise	Coles	685.0	N/A	N/A	0.0	29	56.3
Paris (east)	Edgar	660.0	+0.3	+0.1	-0.1	34	Not PWS
Paris (west)	Edgar	660.1	+0.3	+0.1	+0.2	24	w/Paris (east)
Raccoon ⁽¹⁾	Marion	477.0	+0.9	+0.1	N/A	N/A	91.1
Rend	Franklin	405.0	+5.2	+0.1	+3.7	41	N/A
Salem ⁽³⁾	Marion	546.5	0.0	0.0	-0.2	24	19.7
Shelbyville ⁽¹⁾	Shelby	596.0	+2.3	+2.8	+0.5	41	Not PWS
Sparta ⁽³⁾	Randolph	497.0	+0.1	+0.3	-0.7	21	N/A
Spring ^(3,4)	McDonough	654.0	+0.6	+0.5	+0.1	35	49.1
Springfield ^(1,3)	Sangamon	560.0	-0.4	-0.1	-0.5	35	N/A
Taylorville	Christian	590.0	+0.3	+0.2	0.0	26	49.8
Vermilion ⁽⁴⁾	Vermilion	581.7	0.0	+0.1	-0.2	33	200.5

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 April 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.

Table 6. Month-End Shallow Groundwater Level Data Sites, March 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	JoDaviess	25.00	16.91	3.33	4.28	1.38	4.48
2	Mt. Morris	Ogle	55.00	N/A	N/A	N/A	N/A	N/A
3	Crystal Lake	McHenry	18.00	3.25	0.78	1.31	0.12	0.20
4	Fermi Lab	DuPage	17.00	4.79	-0.36	-0.22	0.20	-0.47
5	Good Hope	McDonough	30.00	3.05	1.56	2.80	0.95	0.93
6	Snicarte	Mason	42.00	38.63	-1.25	-1.25	-0.60	-3.28
7	Coffman	Pike	28.00	9.05	0.69	0.69	2.84	2.31
8	Greenfield	Greene	20.70	4.34	5.35	5.35	4.84	9.72
9	Janesville	Coles	11.00	2.36	2.14	2.14	2.25	0.03
10	St. Peter	Fayette	15.00	N/A	N/A	N/A	N/A	N/A
11	SWS #2	St. Clair	80.00	N/A	N/A	N/A	N/A	N/A
12	Boyleston	Wayne	23.00	N/A	N/A	N/A	N/A	N/A
13	Sparta	Randolph	27.00	N/A	N/A	N/A	N/A	N/A
14	SE College	Saline	11.00	0.47	0.90	0.91	0.79	-0.06
15	Bondville	Champaign	21.00	2.15	0.35	0.36	0.77	-1.14
Averages					1.35	1.40	1.35	1.27

Notes: N/A = Data not available.

higher, and Rend Lake was 0.1 foot higher. At the end of March, Lake Shelbyville was 2.3 feet above the April 1 target level, Carlyle Lake was 4.9 feet above the April 1 target level, and Rend Lake was 5.2 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 March 2019 mean level for Lake Michigan was 580.3 feet. The monthly mean level one year ago (March 2018) was 579.9 feet. The long-term average lake level for March is 578.4 feet, based on 1918-2018 data. In this period of record, the lowest mean level for Lake Michigan for March occurred in 1964 at 576.1 feet, and the highest level for March occurred in 1986 at 581.1 feet. The month-end level of Lake Michigan was 580.3 feet. All values are provided by the U.S. Army Corps of Engineers Detroit District.

Groundwater Information

— JENNIE ATKINS

Comparison to Average Levels. Shallow groundwater levels in 10 observation wells, which are remote from pumping centers, were above normal for the month of March. Levels averaged 1.40 feet above normal and ranged from 1.52 below to 4.28 feet above normal levels (Table 6).

Comparison to February 2019. Shallow groundwater levels were above those of the previous month. Levels averaged 1.35 feet above and ranged from 0.60 feet below to 4.84 feet above February levels

Comparison to March 2018. Shallow groundwater levels in March were above levels from one year ago. Levels averaged 1.27 feet above and ranged from 3.28 feet below to 9.72 feet above levels from March 2018.

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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