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Probabilistic Hydrologic Outlook

National Weather Service Chicago/Romeoville IL

210 PM CST Thu Mar 11 2021

...2021 Spring Flood and Water Outlook Number 3...

...Locations Covered by this Outlook...

This outlook is for rivers and streams within the National Weather Service Chicago Hydrologic Service Area (HSA). The Chicago HSA covers most of northeast Illinois and a portion of far northwest Indiana. This includes the Illinois River downstream to just below La Salle, and numerous Illinois River tributaries including the Fox, DuPage, Des Plaines, Calumet, Iroquois, Kankakee, and Vermilion Rivers. This also includes the Rock River from near Rockton downstream to near Dixon, and Rock River tributaries including the Pecatonica and Kishwaukee Rivers. This outlook covers the time period from early March through late May.

...Outlook Brief Summary...

Based upon current conditions, the risk of flooding ranges from below average to near average across the area. The flood risk has decreased slightly since the last outlook due to the slow melting of all snow cover.

...Risk Factors for Spring Flooding...

To determine the relative risk of spring flooding, numerous factors are considered including snow cover, soil moisture, and current river conditions. A significant snow cover with high water content can increase the chances of flooding once warmer weather melts the snow. Elevated soil moisture conditions can reduce the amount of rainfall that is soaked up by the ground thus increasing the amount of water that then runs off into area streams. Above average river levels can increase the risk for flooding, while below average river levels can decrease the risk of flooding. These risk factors are all taken into consideration when creating this outlook.

...Snow Cover and Water Equivalent...

Modeled snow cover across area river basins is at 0 inches, which contains 0 inches of water equivalent. All snow cover has melted since the previous outlook.

...Soil Moisture and Frost Depth...

Modeled soil moisture values across the area range from below average

to near average. Values are the lowest in northern Indiana, at the 5th to 10th percentile for this time of year.

Frost depth ranges from 0 to 10 inches across area river basins, with the deepest frost depth values reported in isolated parts of southern Wisconsin. The majority of locations have no frozen soil. Despite very cold weather in February, the heavy snow pack at the time reduced the frost depth penetration.

...Current River Conditions...

River streamflow across the area ranges from much below average to much above average. The highest streamflow levels are in southern Wisconsin and northern Illinois.

River ice spotters report generally ice-free rivers across the area. Although temperatures favorable for the formation of river ice can sometimes occur during March, the risk of additional heavy ice cover and ice jams is low as of this outlook.

...Fall 2020 Weather Summary...

Temperatures were generally near the climatic average across northeast Illinois and northwest Indiana during fall 2020. Almost all areas experienced temperatures within 1F of average.

Precipitation ranged from below average in northwest Indiana to above average in northern Illinois during fall 2020. Precipitation was heaviest to the northwest near the Illinois/Wisconsin/Iowa border. Portions of northwest Indiana experienced precipitation about 75% of average, while precipitation to the far northwest experienced precipitation 125-150% of average.

...Winter 2020-2021 Weather Summary...

Temperatures for winter 2020-2021 averaged about 2F below to 1F above the climatic average in northeast Illinois and northwest Indiana. There was a large range in winter temperatures across the season, with December and January generally above average and temperatures for early February below average.

Precipitation for winter 2020-2021 averaged 2 inches below to 2 inches above the climatic average in northeast Illinois and northwest Indiana.

The first measurable snowfall (>0.1 inches) across northeast Illinois occurred in either mid-October or late November. The first measurable snow in northwest Indiana generally occurred in late November to early December. As of March 11, 2021, the season-to-date snowfall ranged from 20 to 50 inches across the area, with the highest totals (over 30 inches) in northwest Illinois and southern Wisconsin, and also along the immediate shore of Lake Michigan in Illinois and Indiana. Observed snowfall ranged from slightly above the climatic average in central Illinois to about 20 inches above average in

Munster (Hohman A	12.0	14.0	17.0 :	46	48	17	20	9	10
South Holland	16.5	18.0	20.0 :	<5	<5	<5	<5	<5	<5
:North Branch Chicago River									
Chicago (Pulaski	18.0	20.0	21.0 :	<5	<5	<5	<5	<5	<5
:Des Plaines River									
Russell	7.0	9.0	10.0 :	33	41	<5	7	<5	6
Gurnee	7.0	9.0	11.0 :	34	37	<5	7	<5	6
Lincolnshire	12.5	14.0	15.5 :	19	20	6	9	<5	6
Des Plaines	15.0	18.0	19.0 :	32	27	<5	7	<5	<5
River Forest	16.0	17.5	18.5 :	<5	<5	<5	<5	<5	<5
Riverside	7.5	8.0	9.0 :	18	18	9	9	<5	<5
Lemont	10.0	13.0	15.0 :	55	45	<5	<5	<5	<5
:WB Du Page River									
Warrenville	11.5	14.5	17.5 :	19	19	<5	<5	<5	<5
:East Branch Du Page River									
Bolingbrook	20.0	22.0	24.0 :	<5	<5	<5	<5	<5	<5
:Du Page River									
Plainfield	12.0	14.0	15.0 :	<5	<5	<5	<5	<5	<5
Shorewood	6.5	8.0	10.0 :	11	11	<5	<5	<5	<5
:Fox River									
Algonquin Lock &	9.5	10.5	12.0 :	>95	63	34	43	18	24
Montgomery	13.5	15.0	16.0 :	22	26	<5	<5	<5	<5
Dayton	12.0	14.0	24.0 :	53	44	17	16	<5	<5
:Kankakee River									
Dunns Bridge	10.0	12.0	13.0 :	14	24	<5	<5	<5	<5
Shelby	10.5	11.5	12.5 :	37	46	10	20	6	11
Momence	5.0	6.5	9.0 :	24	28	9	10	<5	<5
:Iroquois River									
Rensselaer	12.0	14.0	15.0 :	23	27	5	7	5	5
Foresman	18.0	22.0	24.0 :	25	33	<5	<5	<5	<5
Iroquois	18.0	24.0	25.0 :	45	56	<5	<5	<5	<5
:Sugar Creek									
Milford	18.0	22.0	26.0 :	55	53	15	13	<5	<5
:Iroquois River									
Chebanse	16.0	18.0	20.0 :	13	12	<5	5	<5	<5
:Kankakee River									
Wilmington	6.5	8.0	10.0 :	17	15	6	6	<5	<5
:Mazon River									
Coal City	12.0	14.0	17.0 :	19	19	8	8	<5	<5
:Vermilion River									
Pontiac	14.0	15.0	18.0 :	11	12	10	10	6	6
Leonore	16.0	21.0	26.0 :	33	33	13	14	<5	<5
:Pecatonica River									
Shirland	12.0	14.0	15.5 :	>95	38	13	15	<5	<5
:Rock River									
Rockton	10.0	11.0	14.0 :	36	35	21	27	<5	8
Latham Park	9.0	11.0	13.5 :	40	36	14	16	<5	8
Rockford (Auburn	6.0	8.5	10.0 :	10	11	<5	<5	<5	<5
:Kishwaukee River									
Belvidere	9.0	10.0	12.0 :	14	14	5	7	<5	<5
:SB Kishwaukee River									
DeKalb	10.0	11.0	12.5 :	5	8	<5	<5	<5	<5
:Kishwaukee River									
Perryville	12.0	18.0	22.0 :	28	30	<5	<5	<5	<5

:Rock River										
Byron	13.0	14.0	16.0	:	18	20	14	16	<5	9
Dixon	16.0	18.0	20.0	:	12	15	6	9	<5	<5
:Illinois River										
Morris	16.0	18.0	22.0	:	51	47	31	33	10	9
Ottawa	463.0	467.0	471.0	:	35	35	13	13	<5	<5
La Salle	20.0	27.0	31.0	:	>95	69	17	15	<5	5

Legend

CS = Conditional Simulation (Current Outlook)

HS = Historical Simulation

FT = Feet

In Table 2 below...the 95 through 5 percent columns indicate the probability of exceeding the listed stage levels (FT) for the valid time period.

...Table 2--Exceedance Probabilities...

Location	Chance of Exceeding Stages at Specific Locations						
	Valid Period: 03/15/2021 - 06/13/2021						
	95%	90%	75%	50%	25%	10%	5%

:Hart Ditch							
Dyer	3.6	3.9	4.6	5.7	6.6	7.9	10.0
:Thorn Creek							
Thornton	4.9	5.2	6.0	7.0	8.6	10.2	12.2
:Little Calumet River							
Munster (Hohman A	9.5	10.1	10.4	11.7	13.3	16.3	18.6
South Holland	9.7	10.1	11.1	12.0	14.1	15.0	15.6
:North Branch Chicago River							
Chicago (Pulaski	12.8	13.3	14.2	15.1	15.8	16.9	17.8
:Des Plaines River							
Russell	6.4	6.4	6.4	6.7	7.2	7.9	8.7
Gurnee	6.3	6.3	6.3	6.5	7.6	8.4	9.0
Lincolnshire	10.4	10.4	10.4	10.7	12.1	13.6	14.4
Des Plaines	12.6	12.6	12.8	14.1	15.3	17.2	18.0
River Forest	10.1	10.1	10.4	11.7	13.1	14.7	15.6
Riverside	4.9	4.9	5.5	6.4	7.2	8.0	8.4
Lemont	8.9	8.9	9.2	10.1	10.8	11.7	12.0
:WB Du Page River							
Warrenville	9.2	9.3	9.9	10.8	11.3	11.8	12.0
:East Branch Du Page River							
Bolingbrook	16.8	17.1	17.7	18.2	18.7	19.4	19.7
:Du Page River							
Plainfield	8.5	8.7	9.2	9.9	10.6	11.1	11.7
Shorewood	3.7	3.8	4.4	5.1	6.0	6.7	7.3
:Fox River							
Algonquin Lock &	9.8	9.8	9.9	10.1	11.4	13.9	15.3
Montgomery	12.9	12.9	12.9	13.1	13.4	13.9	14.2
Dayton	10.4	10.4	10.7	12.1	12.9	14.9	16.8
:Kankakee River							
Dunns Bridge	8.3	8.4	8.4	8.5	9.4	10.1	10.3

Shelby	9.6	9.6	9.7	10.2	10.7	11.6	13.2
Momence	3.8	3.8	3.9	4.4	5.0	6.3	8.0
:Iroquois River							
Rensselaer	8.2	8.3	9.4	10.7	11.9	13.0	15.1
Foresman	14.7	14.7	15.1	16.5	18.1	19.6	21.4
Iroquois	16.2	16.2	16.3	17.6	20.7	21.9	22.9
:Sugar Creek							
Milford	14.9	14.9	16.8	18.2	20.4	22.8	24.5
:Iroquois River							
Chebanse	11.9	11.9	12.0	12.4	14.8	16.1	17.3
:Kankakee River							
Wilmington	4.7	4.7	4.7	5.1	5.9	6.9	8.5
:Mazon River							
Coal City	5.7	5.9	7.5	10.1	11.5	13.8	14.6
:Vermilion River							
Pontiac	7.8	7.8	8.0	9.6	11.5	15.1	18.1
Leonore	12.7	12.7	12.8	14.5	17.7	21.5	24.2
:Pecatonica River							
Shirland	12.7	12.7	12.7	12.7	12.8	14.1	14.7
:Rock River							
Rockton	9.5	9.5	9.5	9.6	10.5	13.1	13.9
Latham Park	8.8	8.8	8.8	8.9	9.7	12.4	13.3
Rockford (Auburn	3.8	3.9	3.9	3.9	4.2	6.0	6.5
:Kishwaukee River							
Belvidere	5.0	5.0	5.2	6.3	7.9	9.4	10.0
:SB Kishwaukee River							
DeKalb	5.0	5.1	5.9	7.2	8.3	9.7	10.2
:Kishwaukee River							
Perryville	9.8	9.8	9.9	11.0	12.6	13.4	14.3
:Rock River							
Byron	11.5	11.5	11.5	11.6	12.6	14.5	15.4
Dixon	13.2	13.2	13.2	13.3	14.3	16.9	18.3
:Illinois River							
Morris	12.1	12.2	12.8	16.4	19.5	21.9	23.7
Ottawa	461.1	461.1	461.5	462.0	463.9	468.1	470.2
La Salle	21.5	21.5	21.7	23.4	25.5	28.7	30.8

In Table 3 below...the 95 through 5 percent columns indicate the probability of falling below the listed stage levels (FT) for the valid time period.

...Table 3--Nonexceedance Probabilities...

Location	Chance of Falling Below Stages at Specific Locations						
	Valid Period: 03/15/2021 - 06/13/2021						
	95%	90%	75%	50%	25%	10%	5%
:Hart Ditch							
Dyer	2.1	2.1	2.0	2.0	1.9	1.9	1.8
:Thorn Creek							
Thornton	2.9	2.8	2.8	2.7	2.7	2.6	2.6
:Little Calumet River							
Munster (Hohman A	5.5	5.4	5.3	5.2	5.1	5.1	5.0

South Holland	5.7	5.6	5.5	5.4	5.2	5.1	5.1
:North Branch Chicago River							
Chicago (Pulaski	11.2	11.1	11.1	11.0	10.9	10.8	10.8
:Des Plaines River							
Russell	3.2	3.1	2.9	2.7	2.6	2.4	2.4
Gurnee	2.4	2.3	2.0	1.8	1.7	1.4	1.4
Lincolnshire	7.0	6.9	6.7	6.5	6.3	6.1	6.0
Des Plaines	8.6	8.6	8.4	8.2	8.1	7.8	7.8
River Forest	4.5	4.4	4.2	3.8	3.3	2.9	2.7
Riverside	2.5	2.4	2.3	2.1	1.9	1.7	1.6
Lemont	5.9	5.8	5.7	5.5	5.2	5.0	4.9
:WB Du Page River							
Warrenville	7.7	7.7	7.6	7.6	7.5	7.4	7.4
:East Branch Du Page River							
Bolingbrook	14.7	14.7	14.6	14.5	14.4	14.3	14.3
:Du Page River							
Plainfield	6.9	6.9	6.8	6.7	6.7	6.6	6.6
Shorewood	2.4	2.4	2.3	2.2	2.1	2.1	2.1
:Fox River							
Algonquin Lock &	5.8	5.6	5.3	5.1	4.9	4.7	4.6
Montgomery	11.5	11.4	11.3	11.2	11.1	11.0	11.0
Dayton	6.8	6.5	6.3	6.1	5.8	5.4	5.4
:Kankakee River							
Dunns Bridge	4.2	4.1	3.9	3.6	3.3	3.1	2.8
Shelby	5.8	5.6	5.5	5.1	4.8	4.4	4.1
Momence	2.1	2.1	2.0	1.8	1.7	1.6	1.5
:Iroquois River							
Rensselaer	4.5	4.4	4.3	4.0	3.8	3.5	3.3
Foresman	7.1	6.9	6.5	6.0	5.7	5.2	4.8
Iroquois	6.8	6.5	6.0	5.5	5.1	4.8	4.4
:Sugar Creek							
Milford	4.2	4.1	3.9	3.8	3.5	3.3	3.1
:Iroquois River							
Chebanse	4.4	4.2	4.0	3.7	3.4	3.1	2.9
:Kankakee River							
Wilmington	1.8	1.7	1.6	1.5	1.4	1.3	1.2
:Mazon River							
Coal City	2.0	1.9	1.8	1.6	1.4	1.0	0.5
:Vermilion River							
Pontiac	3.6	3.5	3.4	3.3	3.1	3.0	2.9
Leonore	4.7	4.6	4.4	4.2	4.0	3.8	3.6
:Pecatonica River							
Shirland	7.1	6.6	6.0	5.5	5.0	4.7	4.6
:Rock River							
Rockton	6.0	5.5	5.0	4.2	3.9	3.4	3.4
Latham Park	5.7	5.3	5.0	4.4	4.2	4.0	3.9
Rockford (Auburn	3.1	3.0	2.9	2.7	2.6	2.5	2.5
:Kishwaukee River							
Belvidere	2.0	1.9	1.7	1.6	1.5	1.3	1.2
:SB Kishwaukee River							
DeKalb	3.1	3.0	3.0	3.0	2.9	2.8	2.8
:Kishwaukee River							
Perryville	6.4	6.3	6.2	6.0	5.9	5.7	5.6
:Rock River							

Byron	7.6	7.2	6.9	6.2	5.9	5.6	5.5
Dixon	9.8	9.5	9.2	8.6	8.3	8.0	8.0
:Illinois River							
Morris	5.2	5.2	5.0	4.9	4.8	4.7	4.7
Ottawa	458.7	458.6	458.6	458.6	458.5	458.5	458.5
La Salle	12.0	11.8	11.6	11.4	11.1	10.8	10.8

These long-range probabilistic outlooks contain forecast values that are calculated using multiple season scenarios from 30 or more years of climatological data...including current conditions of the river...soil moisture...snow cover...and 30 to 90 day long-range outlooks of temperature and precipitation. By providing a range of probabilities...the level of risk associated with long-range planning decisions can be determined. These probabilistic forecasts are part of the National Weather Service's advanced hydrologic prediction service.

Visit our web site weather.gov/lot for more weather and water information.

The next outlook will be issued toward the end of next month.

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