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Probabilistic Hydrologic Outlook
National Weather Service Chicago/Romeoville IL
400 PM CST Thu Feb 21 2019

...2019 Spring Flood and Water Outlook number 1...

...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, Iroquois, and Vermilion Rivers. This also includes the Rock River from near Rockton downstream to near Dixon. This outlook covers the time period from early March through late May.

...Outlook brief summary...

Based upon current conditions, the risk of flooding is near average to much above average. The greatest risk of flooding is in the Fox, Kishwaukee, Pecatonica, and Rock River basins.

Additional rainfall or snowfall may change the risk of flooding later this spring.

...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 changes of flooding once warmer weather melts the snow. Elevated soil moisture conditions reduce the amount of rainfall that is soaked up by the ground and increase the amount of water that then runs off into area streams. Above average river levels reduce the river rise required to reach flood stage, while below average river levels would require an increased amount of river rise to reach flood stage.

...Snow cover and water equivalent...

Modeled snow cover across the area ranges from near 0 inches to near 8 inches, which contains 0 inches to 1 inch of water equivalent. A few isolated areas may have snow cover up to 10 inches in depth and 2 inches of water equivalent. The deepest snow cover was in far northern and northwestern Illinois and the highest water equivalent was in a few isolated areas near Rockford. The majority of the area had snow water equivalent values of less than 1 inch.

...Soil moisture and frost depth...

Modeled soil moisture values across the area range from slightly above average to much above average, with the highest values in far northern and northwestern Illinois. In far northwestern Indiana, soil moisture values range from the 90th to 95th percentile for late February while widespread areas of central, northern, and northwestern Illinois exceed the 99th percentile.

Frost depth was generally 8 to 10 inches across the area, with a few areas possibly as low as 4 inches.

...Current river conditions...

As of February 21, river levels across the area ranged from near average to above average. The highest river levels were in the Rock River basin in northern Illinois.

River ice spotters report a few areas of heavy ice cover remaining along the Des Plaines River, Fox River, and Rock River. The general trend is toward diminishing ice cover. River ice may cause ice jams this spring, but the risk is low as of this outlook.

...Fall 2018 weather summary...

Temperatures were generally below the climatic average across northeast Illinois and northwest Indiana during Fall 2018. Temperatures trended more toward below average values when moving from southeast to northwest. Portions of northwest Indiana experienced temperatures 1-2F below average while northern and northwestern Illinois experienced temperatures 2-3F below average.

Precipitation was generally above the climatic average across northeast Illinois and northwest Indiana during Fall 2018. Precipitation was heaviest to the northwest near the Illinois/Wisconsin border. Portions of northwestern Indiana experienced precipitation about 100-125% of average while northern and northwestern Illinois experienced precipitation about 150-175% of average.

...Winter 2018-2019 weather summary...

Temperatures for Winter 2018-2019 through January averaged about 1.5F above the climatic average in northeast Illinois.

Precipitation for Winter 2018-2019 through January averaged about 1.7 inches above the climatic average in northeast Illinois.

The first measurable snowfall (>0.1 inches) across northeastern illinois and northwestern Indiana was generally reported in early November. A few

locations reported snowfall as early as mid-October. As of February 19, the season-to-date snowfall ranged from 20 to 50 inches across the area, with the highest totals (over 50 inches) in northwestern Illinois. Observed snowfall ranged from near average in northwest Indiana to over 200% of average in some portions of northwest Illinois. A sharp gradient in snowfall values was observed between near average and much above average areas.

Heavy river ice conditions in January and early February caused numerous ice jams which caused flooding along a few area rivers.

...Spring weather outlook...

The long term outlook from the Climate Prediction Center indicates near equal changes of below average, near average, or above average temperatures and precipitation.

Although snow cover, soil moisture, and recent river levels can provide some indication of the relative risk of spring flooding, any weather system that produces heavy rainfall could cause flooding. Spring flood outlooks are not able to assess the risk of flooding due to heavy rainfall more than a week or so in advance.

...Detailed flood outlook...

In Table 1 below...the current (CS) and historical (HS) or normal probabilities of exceeding minor...moderate...and major flood stages are listed for the valid time period.

CS values indicate the probability of reaching a flood category based on current conditions.

HS values indicate the probability of reaching a flood category based on historical or normal conditions.

When the value of CS is more than HS...the probability of exceeding that level is higher than normal. When the value of CS is less than HS...the probability of exceeding that level is lower than normal.

...Table 1--Probabilities for minor...moderate and major flooding...
Valid Period: 02/25/2019 - 05/26/2019

	Categorical Flood Stages (FT)			Current and Historical Chances of Exceeding Flood Categories as a Percentage (%)					
				Minor		Moderate		Major	
Location	Minor	Mod	Major	CS	HS	CS	HS	CS	HS
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:Hart Ditch										
Dyer	12.0	13.0	14.0	:	<5	<5	<5	<5	<5	<5
:Thorn Creek										
Thornton	10.0	15.0	16.0	:	8	6	<5	<5	<5	<5
:Little Calumet River										
Munster	12.0	14.0	17.0	:	56	54	15	17	<5	<5
South Holland	16.5	18.0	20.0	:	<5	<5	<5	<5	<5	<5
:NB Chicago River										
Chicago (Pulaski	18.0	20.0	21.0	:	31	25	<5	5	<5	<5
:Des Plaines River										
Russell	7.0	9.0	10.0	:	93	73	16	11	9	6
Gurnee	7.0	9.0	11.0	:	83	49	25	15	7	<5
Lincolnshire	12.5	14.0	15.5	:	33	20	12	9	<5	<5
Des Plaines	15.0	18.0	19.0	:	40	23	<5	<5	<5	<5
River Forest	16.0	17.5	18.5	:	5	<5	<5	<5	<5	<5
Riverside	7.5	8.0	9.0	:	15	17	9	11	<5	<5
Lemont	10.0	11.0	12.0	:	61	43	22	18	6	9
:WB Du Page River										
Warrenville	11.5	14.5	17.5	:	32	28	<5	<5	<5	<5
:East Branch Du Page River										
Bolingbrook	19.5	21.0	23.0	:	47	44	<5	<5	<5	<5
:Du Page River										
Plainfield	12.0	14.0	15.0	:	<5	6	<5	<5	<5	<5
Shorewood	6.5	8.0	10.0	:	14	10	<5	<5	<5	<5
:Fox River										
Algonquin Lock &	9.5	10.5	12.0	:	>95	54	86	38	57	22
Montgomery	13.0	14.0	15.0	:	93	48	36	12	<5	<5
Dayton	12.0	14.0	24.0	:	65	43	27	17	<5	<5
:Kankakee River										
Dunns Bridge	10.0	12.0	13.0	:	42	33	6	7	<5	6
Kouts	11.0	13.0	14.0	:	47	35	6	7	<5	6
Shelby	9.0	11.0	12.5	:	93	80	53	40	18	17
Momence	5.0	6.5	9.0	:	42	31	12	12	<5	<5
:Iroquois River										
Rensselaer	12.0	14.0	15.0	:	32	37	11	9	10	7
Foresman	18.0	22.0	24.0	:	25	23	6	<5	<5	<5
Iroquois	18.0	24.0	25.0	:	64	57	7	7	<5	5
:Sugar Creek										
Milford	18.0	22.0	26.0	:	56	47	12	15	<5	<5
:Iroquois River										
Chebanse	16.0	18.0	20.0	:	17	15	9	10	6	8
:Kankakee River										
Wilmington	6.5	8.0	10.0	:	17	19	9	9	<5	<5
:Mazon River										
Coal City	12.0	14.0	17.0	:	18	15	7	<5	<5	<5
:Vermilion River										
Pontiac	14.0	15.0	18.0	:	13	12	10	8	<5	<5
Leonore	16.0	21.0	26.0	:	42	35	15	12	<5	<5
:Pecatonica River										
Shirland	12.0	14.0	15.5	:	>95	44	73	17	38	<5
:Rock River										
Rockton	10.0	11.0	14.0	:	77	26	56	12	28	6
Latham Park	10.0	11.0	14.0	:	83	28	56	13	25	<5
Rockford (Auburn	9.0	10.0	11.0	:	9	<5	6	<5	<5	<5

:Kishwaukee River									
Belvidere	9.0	10.0	12.0	: 70	17	56	7	14	<5
:SB Kishwaukee River									
De Kalb	10.0	11.0	12.5	: <5	<5	<5	<5	<5	<5
:Kishwaukee River									
Perryville	12.0	18.0	22.0	: 94	35	23	<5	6	<5
:Rock River									
Byron	13.0	14.0	16.0	: 84	18	63	12	38	8
Dixon	16.0	18.0	20.0	: 64	14	28	8	10	<5
:Illinois River									
Morris	16.0	18.0	22.0	: 53	47	28	28	9	6
Ottawa	463.0	466.0	469.0	: 52	41	21	18	11	8
La Salle	20.0	27.0	31.0	: 86	73	21	20	6	7

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...

Chance of Exceeding Stages
at Specific Locations
Valid Period: 02/25/2019 - 05/26/2019

Location	95%	90%	75%	50%	25%	10%	5%
:Hart Ditch							
Dyer	3.5	3.7	4.6	5.7	6.6	7.5	8.2
:Thorn Creek							
Thornton	4.9	5.4	6.3	7.5	8.6	9.7	12.2
:Little Calumet River							
Munster	9.0	10.0	10.8	12.3	13.2	15.4	16.4
South Holland	9.4	10.1	11.0	12.5	13.8	14.5	15.0
:NB Chicago River							
Chicago (Pulaski	13.6	14.3	15.9	17.2	18.3	19.4	19.9
:Des Plaines River							
Russell	6.8	7.2	7.6	7.8	8.3	9.8	11.5
Gurnee	6.1	6.5	7.3	8.1	9.0	10.4	11.3
Lincolnshire	9.7	10.3	10.8	11.7	13.3	14.5	15.5
Des Plaines	11.4	12.6	13.5	14.5	15.9	17.4	18.0
River Forest	8.2	9.4	10.6	12.3	13.4	15.0	16.1
Riverside	4.3	4.9	5.6	6.5	7.1	7.9	8.5
Lemont	7.8	8.5	9.4	10.3	10.9	11.8	12.5
:WB Du Page River							
Warrenville	9.2	9.5	9.9	10.9	11.8	12.4	12.8
:East Branch Du Page River							
Bolingbrook	17.8	18.0	18.5	19.4	20.1	20.5	20.6
:Du Page River							
Plainfield	8.7	8.9	9.5	10.4	11.1	11.6	11.9
Shorewood	3.5	3.9	4.4	5.1	6.1	6.6	7.2

:Fox River							
Algonquin Lock &	10.0	10.2	11.0	12.8	14.6	16.0	17.0
Montgomery	12.9	13.1	13.2	13.8	14.2	14.5	14.7
Dayton	9.7	10.3	11.6	12.9	14.0	15.4	16.3
:Kankakee River							
Dunns Bridge	7.8	8.2	8.8	9.8	10.5	11.5	12.1
Kouts	8.9	9.4	10.0	11.0	11.7	12.6	13.2
Shelby	8.8	9.4	9.9	11.1	11.9	13.3	13.3
Momence	3.4	3.6	3.9	4.8	5.3	7.3	8.3
:Iroquois River							
Rensselaer	8.1	8.5	9.8	11.2	12.4	14.9	18.1
Foresman	12.5	12.9	14.8	16.5	18.1	19.8	22.3
Iroquois	13.5	14.2	16.8	19.4	22.0	22.5	24.8
:Sugar Creek							
Milford	12.4	14.2	16.6	18.4	19.7	23.0	24.4
:Iroquois River							
Chebanse	8.8	9.3	10.7	13.1	15.3	17.3	20.3
:Kankakee River							
Wilmington	3.2	3.4	4.3	5.3	6.1	7.6	9.7
:Mazon River							
Coal City	5.6	6.1	7.8	9.7	11.3	13.6	14.2
:Vermilion River							
Pontiac	5.8	6.8	8.2	10.1	11.9	14.9	17.8
Leonore	8.7	10.0	12.4	15.0	17.8	22.4	25.4
:Pecatonica River							
Shirland	13.0	13.4	14.0	15.0	16.1	17.4	19.0
:Rock River							
Rockton	9.0	9.4	10.2	11.5	14.2	16.3	19.3
Latham Park	9.3	9.6	10.3	11.6	14.0	14.9	16.0
Rockford (Auburn	4.0	4.2	4.6	5.4	7.2	8.7	10.9
:Kishwaukee River							
Belvidere	6.9	7.6	8.3	10.2	11.2	12.3	12.8
:SB Kishwaukee River							
De Kalb	6.2	6.4	6.8	7.7	8.4	9.1	9.6
:Kishwaukee River							
Perryville	11.4	12.6	13.6	15.6	17.7	20.7	22.5
:Rock River							
Byron	11.9	12.8	13.5	15.1	16.8	18.6	21.0
Dixon	13.8	14.7	15.5	17.0	18.4	20.0	21.9
:Illinois River							
Morris	8.1	9.5	12.8	16.4	19.0	21.5	23.2
Ottawa	459.4	459.8	461.6	463.3	465.4	469.1	470.5
La Salle	16.5	18.5	21.2	24.3	26.5	30.3	31.4

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...

Chance of Falling Below Stages
at Specific Locations
Valid Period: 02/25/2019 - 05/26/2019

Location	95%	90%	75%	50%	25%	10%	5%

:Hart Ditch							
Dyer	2.1	2.1	2.0	2.0	2.0	1.9	1.9
:Thorn Creek							
Thornton	2.9	2.9	2.8	2.8	2.7	2.7	2.7
:Little Calumet River							
Munster	5.7	5.6	5.6	5.5	5.4	5.3	5.2
South Holland	5.6	5.6	5.5	5.4	5.3	5.3	5.2
:NB Chicago River							
Chicago (Pulaski	11.4	11.3	11.3	11.2	11.1	11.0	11.0
:Des Plaines River							
Russell	2.8	2.8	2.6	2.5	2.3	2.2	2.0
Gurnee	2.7	2.7	2.5	2.3	2.1	1.9	1.8
Lincolnshire	7.1	7.1	6.9	6.7	6.5	6.3	6.2
Des Plaines	8.8	8.8	8.6	8.5	8.2	8.0	7.8
River Forest	4.9	4.8	4.5	4.2	3.7	3.4	3.0
Riverside	2.6	2.5	2.4	2.3	2.1	1.9	1.8
Lemont	6.2	6.2	5.9	5.8	5.6	5.3	5.2
:WB Du Page River							
Warrenville	7.7	7.7	7.7	7.6	7.5	7.5	7.5
:East Branch Du Page River							
Bolingbrook	14.9	14.9	14.8	14.8	14.6	14.6	14.5
:Du Page River							
Plainfield	6.9	6.9	6.9	6.8	6.8	6.7	6.7
Shorewood	2.4	2.4	2.3	2.3	2.2	2.1	2.1
:Fox River							
Algonquin Lock &	5.5	5.4	5.3	5.2	5.1	5.0	4.9
Montgomery	11.5	11.4	11.4	11.3	11.3	11.2	11.2
Dayton	6.6	6.5	6.4	6.3	6.0	5.7	5.5
:Kankakee River							
Dunns Bridge	5.2	5.0	4.7	4.4	4.1	3.8	3.6
Kouts	6.1	6.0	5.7	5.4	5.1	4.7	4.5
Shelby	6.6	6.5	6.1	5.7	5.3	5.0	4.7
Momence	2.4	2.4	2.2	2.1	1.9	1.8	1.7
:Iroquois River							
Rensselaer	5.0	4.8	4.6	4.4	4.1	4.0	3.8
Foresman	7.8	7.6	7.1	6.6	6.1	5.8	5.5
Iroquois	7.7	7.5	6.9	6.4	5.8	5.6	5.3
:Sugar Creek							
Milford	4.4	4.2	4.1	3.8	3.7	3.5	3.4
:Iroquois River							
Chebanse	4.6	4.5	4.2	3.8	3.5	3.3	3.1
:Kankakee River							
Wilmington	2.0	1.9	1.8	1.7	1.5	1.4	1.3
:Mazon River							
Coal City	1.9	1.9	1.7	1.6	1.4	1.3	1.0
:Vermilion River							
Pontiac	3.7	3.6	3.5	3.4	3.3	3.2	3.0
Leonore	4.9	4.6	4.4	4.2	4.1	3.9	3.7
:Pecatonica River							
Shirland	6.9	6.8	6.7	6.5	6.1	5.8	5.7
:Rock River							
Rockton	4.3	4.1	3.9	3.6	3.5	3.3	3.1
Latham Park	5.3	5.2	5.0	4.8	4.7	4.5	4.4

Rockford (Auburn :Kishwaukee River	3.0	3.0	3.0	2.9	2.8	2.7	2.7
Belvidere :SB Kishwaukee River	2.1	2.0	2.0	1.9	1.8	1.7	1.6
De Kalb :Kishwaukee River	3.3	3.3	3.3	3.2	3.2	3.1	3.1
Perryville :Rock River	6.4	6.4	6.4	6.3	6.1	6.0	5.9
Byron	7.3	7.3	7.1	6.8	6.6	6.3	6.2
Dixon :Illinois River	9.7	9.6	9.5	9.3	9.1	8.8	8.6
Morris	5.5	5.4	5.3	5.2	5.1	4.9	4.8
Ottawa	458.8	458.7	458.7	458.6	458.6	458.5	458.5
La Salle	12.3	12.1	12.0	11.7	11.5	11.2	11.0

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.

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