

## Spring Flood Outlook

### EASTERN WISCONSIN STREAMS

FALL PRECIPITATION WAS ABOVE NORMAL IN THE NORTHERN PART OF THE BASIN... TRANSITIONING TO BELOW NORMAL AMOUNTS ACROSS SOUTHEASTERN WISCONSIN. ABOVE NORMAL FALL TEMPERATURES WERE REPLACED IN DECEMBER BY COOLER THAN NORMAL TEMPERATURES ACROSS THE SOUTHERN TWO THIRDS OF THE AREA. TEMPERATURES HAVE BEEN NEAR NORMAL IN JANUARY.



MONTHLY STREAMFLOW AVERAGES WERE ABOVE NORMAL IN THE FALL AND ARE NEAR NORMAL FOR MOST OF THE REGION INTO THE WINTER MONTHS... WITH ICE IMPACTS CONTRIBUTING TO ELEVATED STAGES IN SOME AREAS.

WINTER PRECIPITATION HAS BEEN NEAR NORMAL ACROSS ALL EASTERN WISCONSIN BASINS.

CURRENT SOIL MOISTURE PROFILE SHOWS UNUSUALLY MOIST CONDITIONS ACROSS THE NORTHERN PORTION OF THE AREA AND NEAR NORMAL CONDITIONS THROUGHOUT THE SOUTHERN HALF OF THE DRAINAGE AREA.

U.S. DROUGHT MONITOR LONG-TERM DROUGHT INDICATOR INDICATES NEAR NORMAL CONDITIONS ACROSS THE ENTIRE REGION.

SNOW DEPTHS RANGE FROM 6 TO 15 INCHES BASED ON OBSERVATIONS. ASSOCIATED MODELED WATER EQUIVALENTS RANGE FROM 0.7 TO 2.6 INCHES.

## WISCONSIN RIVER BASIN

WIDESPREAD RECORD AND NEAR RECORD RAINFALL OCCURRED ACROSS MUCH OF THE WISCONSIN RIVER BASIN NEAR THE END OF SEPTEMBER. COMBINED WITH THE ANTECEDENT CONDITIONS THAT WERE IN PLACE FOLLOWING A VERY WET SUMMER... MAJOR TO RECORD FLOODING WAS OBSERVED AT MANY POINTS FOLLOWING THIS EVENT. FALL PRECIPITATION TOTALED 125 TO 175 PERCENT OF THE MEAN.

ABOVE NORMAL TEMPERATURES IN OCTOBER AND NOVEMBER HELPED TO DRY THINGS OUT SLIGHTLY... BUT STREAMFLOW REMAINED MUCH ABOVE NORMAL THROUGHOUT THE FALL AND CONTINUES TO BE ABOVE NORMAL FOR THIS TIME OF YEAR AT MANY LOCATIONS.

WINTER PRECIPITATION TOTALS THROUGH JANUARY HAVE RANGED FROM NEAR NORMAL OVER MOST OF THE BASIN TO OVER 150 PERCENT OF THE MEAN ACROSS THE FAR WESTERN PORTION OF THE BASIN. WINTER TEMPERATURES HAVE AVERAGED 1 TO 3 DEGREES BELOW NORMAL.

CURRENT MODELED SNOW WATER EQUIVALENTS AVERAGE BETWEEN 2 AND 3 INCHES ACROSS THE NORTHERN AND EASTERN PORTIONS OF THE WISCONSIN BASIN AND 3 TO 4.5 INCHES ACROSS THE SOUTHERN AND FAR WESTERN AREAS. THE CURRENT AVERAGE SNOW DEPTH IS GENERALLY AROUND 12 INCHES WITH A RANGE BETWEEN 6 AND 26 INCHES BASED UPON OBSERVATIONS.

THE U.S. DROUGHT MONITOR LONG TERM DROUGHT INDICATOR SHOWS VERY WET CONDITIONS ACROSS THE ENTIRE AREA.



## ROCK RIVER BASIN

FALL PRECIPITATION RANGED FROM SLIGHTLY BELOW NORMAL IN THE UPPER HALF OF THE ROCK BASIN TO NEAR NORMAL ACROSS THE LOWER END. FALL TEMPERATURES WERE SLIGHTLY ABOVE NORMAL ACROSS THE ENTIRE AREA BUT WINTER TEMPERATURES HAVE BEEN 4 TO 6 DEGREES BELOW NORMAL THROUGH JANUARY.

MONTHLY AVERAGE STREAMFLOWS HAVE BEEN ABOVE NORMAL IN MOST LOCATIONS THROUGHOUT THE FALL AND INTO THE WINTER.

PRECIPITATION IN DECEMBER AND JANUARY HAS BEEN NEAR NORMAL ACROSS THE ENTIRE BASIN.

CURRENT MODELED SNOW WATER EQUIVALENTS RANGE FROM AROUND 1.5 TO 2.5 INCHES ACROSS THE UPPER HALF OF THE ROCK BASIN AND FROM 1 TO 1.5 INCHES ACROSS THE LOWER END. CURRENT SNOW DEPTHS RANGE FROM 6 TO 12 INCHES IN THE UPPER ROCK WITH DEPTHS ELSEWHERE GENERALLY 6 INCHES OR LESS BASED ON OBSERVATIONS.

FROST DEPTHS RANGE FROM 7 TO 18 INCHES IN MOST AREAS.

THE U.S. DROUGHT MONITOR LONG TERM DROUGHT INDICATOR SHOWS UNUSUALLY WET TO VERY WET CONDITIONS ACROSS THE ENTIRE BASIN.



## Spring Flood Outlook

### LaCrosse Area

THE FLOODING POTENTIAL FOR THIS COMING SPRING APPEARS TO BE ABOVE TO MUCH ABOVE NORMAL.

GIVEN THE CURRENT OUTLOOK CONDITIONS...THERE ARE SEVERAL FACTORS THAT ARE POINTING TOWARD MODERATE TO MAJOR FLOODING FOR SEVERAL TRIBUTARIES FEEDING INTO THE MISSISSIPPI RIVER...AND THE MISSISSIPPI RIVER ITSELF. REFER TO INDIVIDUAL SECTIONS BELOW FOR FURTHER DETAILS.

HERE IS A TABLE OF FLOOD POTENTIAL CATEGORICAL PROBABILITIES AND DEPARTURES FROM NORMAL...VALID 2/1/2011 - 5/2/2011

LOCATION	-----FLOOD STAGES-----						DEP FROM NORMAL OF REACHING FLOOD STAGE
	MINOR		MODERATE		MAJOR		
	STG	PCT	STG	PCT	STG	PCT	
<b>BLACK RIVER</b>							
NEILLSVILLE	18	1%	20	---	22	---	NEAR NORMAL
BLACK RIVER FALLS	47	72%	51	47%	55	16%	21% GREATER
GALESVILLE	12	82%	13	63%	15	6%	31% GREATER
<b>KICKAPOO RIVER</b>							
LA FARGE	12	19%	13	3%	14	---	18% GREATER
VIOLA	14	90%	17	4%	20	---	66% GREATER
READSTOWN	12	60%	15	---	17	---	52% GREATER
SOLDIERS GROVE	13	75%	16	1%	19	---	58% GREATER
GAYS MILLS	13	96%	15	23%	17	---	61% GREATER
STEUBEN	12	93%	13	54%	15	---	66% GREATER
<b>MISSISSIPPI RIVER</b>							
LAKE CITY	16	93%	18	73%	20	32%	68% GREATER
WABASHA	12	>98%	14	91%	16	63%	70% GREATER
ALMA DAM 4	16	59%	17	34%	18	21%	52% GREATER
MINNESOTA CITY DAM 5	660	93%	662	83%	665	37%	64% GREATER
WINONA DAM 5A	656	93%	659	70%	661	37%	68% GREATER
WINONA	13	>98%	15	93%	18	67%	70% GREATER
TREMPEALEAU DAM 6	647	96%	649	86%	651	45%	62% GREATER
LA CRESCENT DAM 7	641	95%	643	82%	645	44%	61% GREATER
LA CROSSE	12	>98%	13	91%	15.5	47%	70% GREATER
GENOA DAM 8	631	>98%	634	82%	636	47%	70% GREATER
LANSING	18	67%	19	55%	20	42%	60% GREATER
LYNXVILLE DAM 9	625	93%	628	75%	631	36%	64% GREATER
MCGREGOR	16	>98%	20	83%	23	60%	70% GREATER
GUTTENBERG DAM 10	15	>98%	18	73%	21	39%	70% GREATER
<b>SOUTH BRANCH BARABOO RIVER</b>							
HILLSBORO	13	9%	14	---	16	---	NEAR NORMAL
<b>SOUTH BRANCH ROOT RIVER</b>							
LANESBORO	12	27%	16	3%	18	---	21% GREATER
<b>TREMPEALEAU RIVER</b>							
DODGE	9	>98%	11	67%	12	26%	80% GREATER

\*\*\* BLACK AND TREMPALEAU RIVER BASINS IN WEST CENTRAL WISCONSIN \*\*\*

WIDESPREAD RECORD AND NEAR RECORD RAINFALL OCCURRED ACROSS THESE BASINS NEAR THE END OF SEPTEMBER. COMBINED WITH THE ANTECEDENT CONDITIONS THAT WERE IN PLACE FOLLOWING A VERY WET SUMMER. MAJOR TO RECORD FLOODING WAS OBSERVED. AUTUMN PRECIPITATION TOTALED 125 TO 175 PERCENT OF THE MEAN.

THE COMBINATION OF ABOVE-NORMAL TEMPERATURES AND BELOW-NORMAL PRECIPITATION DURING OCTOBER AND NOVEMBER HELPED TO DRY THINGS OUT SLIGHTLY...BUT STREAMFLOW REMAINED MUCH ABOVE NORMAL THROUGHOUT THE AUTUMN AND CONTINUES TO BE ABOVE NORMAL FOR THIS TIME OF YEAR.

PRECIPITATION IN DECEMBER WAS MUCH ABOVE NORMAL...WITH MANY STATIONS REPORTING TOP-5 OR RECORD SNOWFALL TOTALS FOR THE MONTH. WINTER PRECIPITATION TOTALS THROUGH JANUARY HAVE RANGED FROM 125 TO OVER 200 PERCENT OF THE MEAN ACROSS THE BASIN. WINTER TEMPERATURES HAVE AVERAGED 1 TO 4 DEGREES BELOW THE MEAN.

CURRENT MODELED SNOW WATER EQUIVALENTS AVERAGE BETWEEN 3 AND 4 INCHES ACROSS MUCH OF THESE BASINS. THE CURRENT AVERAGE SNOW DEPTH IS GENERALLY AROUND 15 INCHES WITH A RANGE BETWEEN 10 AND 25 INCHES BASED UPON OBSERVATIONS.

THE U.S. DROUGHT MONITOR LONG TERM DROUGHT INDICATOR SHOWS VERY WET TO EXTREMELY WET CONDITIONS ACROSS THE ENTIRE AREA.

THE CHANCE FOR FLOODING IN THESE BASINS IS ABOVE OR EVEN MUCH ABOVE NORMAL GIVEN THESE CONDITIONS.

\*\*\* WISCONSIN RIVER BASIN AND TRIBUTARIES INCLUDING THE KICKAPOO \*\*\*

WIDESPREAD HEAVY RAINFALL OCCURRED ACROSS MUCH OF THE REGION NEAR THE END OF SEPTEMBER. COMBINED WITH THE ANTECEDENT CONDITIONS THAT WERE IN PLACE FOLLOWING A VERY WET SUMMER. MAJOR FLOODING WAS OBSERVED AT MANY POINTS FOLLOWING THIS EVENT. AUTUMN PRECIPITATION TOTALED 125 TO 175 PERCENT OF THE MEAN.

THE COMBINATION OF ABOVE-NORMAL TEMPERATURES AND BELOW-NORMAL PRECIPITATION DURING OCTOBER AND NOVEMBER HELPED TO DRY THINGS OUT SLIGHTLY...BUT STREAMFLOW REMAINED MUCH ABOVE NORMAL THROUGHOUT THE FALL AND CONTINUES TO BE ABOVE NORMAL FOR THIS TIME OF YEAR.

WINTER PRECIPITATION TOTALS THROUGH JANUARY HAVE RANGED FROM NEAR NORMAL TO ABOUT 150 PERCENT OF THE MEAN. WINTER TEMPERATURES HAVE AVERAGED 1 TO 3 DEGREES BELOW NORMAL.

CURRENT MODELED SNOW WATER EQUIVALENTS AVERAGE BETWEEN 2 AND 4 INCHES. THE CURRENT AVERAGE SNOW DEPTH IS GENERALLY AROUND 10 INCHES WITH A RANGE BETWEEN 6 AND 14 INCHES BASED UPON OBSERVATIONS.

THE U.S. DROUGHT MONITOR LONG TERM DROUGHT INDICATOR SHOWS VERY WET CONDITIONS ACROSS THE ENTIRE AREA.

THE CHANCE FOR FLOODING IN THESE BASINS IS MUCH ABOVE NORMAL GIVEN THESE CONDITIONS.

THIS OUTLOOK IS FOR THE FOLLOWING RIVERS IN SOUTHERN MINNESOTA AND WESTERN WISCONSIN

THE POTENTIAL FOR SPRING FLOODING IS ABOVE TO MUCH ABOVE NORMAL FOR THE ENTIRE AREA.

- MISSISSIPPI RIVER AND ITS TRIBUTARIES FROM ST CLOUD TO RED WING
- MINNESOTA RIVER AND ITS TRIBUTARIES
- ST CROIX RIVER
- CHIPPEWA RIVER IN WEST CENTRAL WISCONSIN

THE CHANHASSEN OFFICE OF THE NATIONAL WEATHER SERVICE HAS IMPLEMENTED ADVANCED HYDROLOGIC PREDICTION SERVICE (AHPS) FOR ALL SOUTHERN MINNESOTA LOCATIONS IN THE MINNESOTA RIVER BASIN, THE MISSISSIPPI RIVER BASIN FROM ST. CLOUD TO RED WING, THE ST. CROIX RIVER BASIN AND THE CHIPPEWA RIVER BASIN IN WEST CENTRAL WISCONSIN. AHPS ENABLES THE NATIONAL WEATHER SERVICE TO PROVIDE LONG-RANGE PROBABILISTIC RIVER OUTLOOKS.

THE DISCUSSION IS PROVIDED BELOW THE TABLES.

CHANCE OF EXCEEDING STAGES AT SPECIFIC LOCATIONS

VALID JANUARY 27, 2011 - 020111

LOCATION	90%	80%	70%	60%	50%	40%	30%	20%	10%
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MISSISSIPPI RIVER									
ST CLOUD SCSU (DATUM = 958.49)	8.3	8.8	9.1	9.5	9.6	10.0	10.3	10.9	11.6
	FLOOD STAGE = 9.0								
ANOKA	836.6	837.6	838.0	838.6	839.0	839.3	839.5	840.4	843.2
MINNEAPOLIS (DATUM = 794.30)	12.4	13.9	14.5	15.4	15.8	16.2	16.6	17.6	20.9
	FLOOD STAGE = 16.0								
ST PAUL (DATUM = 683.62)	17.0	18.3	19.4	20.7	21.8	22.5	23.3	24.1	27.3
	FLOOD STAGE = 14.0								
HASTINGS TW (DATUM = 670.65)	18.2	19.0	19.7	20.7	21.6	22.2	22.8	23.5	26.3
	FLOOD STAGE = 15.0								
RED WING TW (DATUM = N/A)	681.4	682.6	683.5	683.8	684.5	684.9	685.2	685.9	687.9
	FLOOD STAGE = 680.5								
RED WING (DATUM = 665.13)	15.2	16.6	17.6	17.9	18.6	18.9	19.2	19.7	21.1
	FLOOD STAGE = 14.0								
MINNESOTA RIVER									
MONTEVIDEO (DATUM = 909.12)	16.6	17.1	17.3	18.3	19.2	19.8	20.3	20.7	22.4
	FLOOD STAGE = 14.0								
GRANITE FALLS (DATUM = 0.00)	889.2	889.7	890.1	891.5	892.3	892.8	893.2	893.5	895.7
	FLOOD STAGE = 888.0								
NEW ULM (DATUM = 0.00)	801.3	801.9	802.5	803.5	804.3	804.9	805.4	806.1	808.1
	FLOOD STAGE = 796.0								
MANKATO (DATUM = 747.92)	21.5	22.8	23.5	24.5	25.2	25.5	26.5	27.6	28.5
	FLOOD STAGE = 22.0								
HENDERSON (DATUM = 700.00)	734.3	735.1	735.8	736.3	736.7	737.1	737.6	738.3	739.0
	FLOOD STAGE = 732.0								
JORDAN (DATUM = 690.00)	28.3	29.5	30.3	31.1	31.4	32.0	32.5	33.6	34.8
	FLOOD STAGE = 25.0								
SHAKOPEE (DATUM = N/A)	714.1	715.3	716.4	717.2	717.6	718.4	718.8	720.0	720.7
	FLOOD STAGE = 708.0								

SAVAGE	710.8	711.7	712.3	713.7	714.7	715.2	715.5	716.1	717.4
(DATUM = 600.00)	FLOOD STAGE = 702.0								
ST CROIX RIVER									
STILLWATER	86.6	87.9	88.9	89.2	89.7	90.2	90.6	91.2	93.3
(DATUM = 600.00)	FLOOD STAGE = 87.0								
EAU CLAIRE RIVER									
FALL CREEK	N/A	9.3	10.3	11.5	12.8	13.7	14.9	17.0	19.1
(DATUM = 830.00)	FLOOD STAGE = 11.0								
CHIPPEWA RIVER									
EAU CLAIRE	767.8	769.9	771.1	771.6	772.6	773.5	774.1	775.3	778.7
(DATUM = 0.00)	FLOOD STAGE = 773.0								
DURAND	11.4	12.1	13.1	13.6	14.2	14.6	15.6	16.2	18.4
(DATUM = 692.57)	FLOOD STAGE = 13.0								
SOUTH FORK CROW RIVER									
MAYER MN	13.6	14.5	15.4	16.2	16.8	17.1	17.3	17.5	19.0
(DATUM = 925.79)	FLOOD STAGE = 11.0								
DELANO MN	17.5	18.3	19.1	19.9	20.7	21.0	21.2	21.4	23.1
(DATUM = 900.00)	FLOOD STAGE = 16.5								
CROW RIVER									
ROCKFORD MN	10.7	12.7	13.7	14.0	14.8	15.2	16.0	16.9	18.3
(DATUM = 893.08)	FLOOD STAGE = 10.0								
REDWOOD RIVER									
REDWOOD FALLS	8.1	8.4	9.1	9.6	9.8	10.0	10.3	10.8	12.3
(DATUM = 972.33)	FLOOD STAGE = 6.0								
COTTONWOOD RIVER									
NEW ULM	14.1	14.5	15.3	15.8	16.1	16.5	17.1	17.4	18.5
(DATUM = 796.83)	FLOOD STAGE = 11.0								
SAUK RIVER									
ST CLOUD	5.7	6.2	6.4	6.5	6.7	6.8	7.3	7.7	8.3
(DATUM = 1034.63)	FLOOD STAGE = 6.0								
LONG PRAIRIE RIVER									
LONG PRAIRIE	6.7	7.0	7.2	7.4	7.7	7.9	8.1	8.3	8.7
(DATUM = 1281.74)	FLOOD STAGE = 6.0								
MISSISSIPPI RIVER									
ST CLOUD SCSU	4.5	4.5	4.4	4.4	4.3	4.2	4.1	4.0	4.0
(DATUM = 958.49)	FLOOD STAGE = 9.0								
ANOKA	831.2	831.2	831.2	831.2	831.2	831.1	831.1	831.1	831.0
MINNEAPOLIS	4.5	4.5	4.5	4.4	4.4	4.2	4.1	4.1	4.0
(DATUM = 794.30)	FLOOD STAGE = 16.0								
ST PAUL	1.7	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.4
(DATUM = 683.62)	FLOOD STAGE = 14.0								
HASTINGS TW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
(DATUM = 670.65)	FLOOD STAGE = 15.0								
RED WING TW	667.0	667.0	667.0	667.0	667.0	667.0	667.0	667.0	667.0
(DATUM = N/A)	FLOOD STAGE = 680.5								
RED WING	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.8	1.8

(DATUM = 665.13) FLOOD STAGE = 14.0

MINNESOTA RIVER

MONTEVIDEO 4.7 4.6 4.5 4.5 4.4 4.4 4.4 4.3 3.6  
(DATUM = 909.12) FLOOD STAGE = 14.0

GRANITE FALLS 883.2 883.2 883.1 883.1 883.1 883.1 883.1 883.0 882.5  
(DATUM = 0.00) FLOOD STAGE = 888.0

NEW ULM 787.7 787.7 787.7 787.6 787.6 787.6 787.6 787.5 787.4  
(DATUM = 0.00) FLOOD STAGE = 796.0

MANKATO 3.7 3.6 3.6 3.6 3.5 3.5 3.4 3.4 3.4  
(DATUM = 747.92) FLOOD STAGE = 22.0

HENDERSON 715.7 715.7 715.6 715.5 715.5 715.4 715.3 715.2 715.1  
(DATUM = 700.00) FLOOD STAGE = 732.0

JORDAN 6.1 6.1 6.0 5.9 5.9 5.9 5.8 5.7 5.7  
(DATUM = 690.00) FLOOD STAGE = 25.0

SHAKOPEE 688.6 688.5 688.4 688.4 688.3 688.3 688.1 688.0 688.0  
(DATUM = N/A) FLOOD STAGE = 708.0

SAVAGE 687.0 687.0 687.0 687.0 687.0 687.0 687.0 687.0 687.0  
(DATUM = 600.00) FLOOD STAGE = 702.0

ST CROIX RIVER

STILLWATER 75.3 75.3 75.3 75.3 75.3 75.3 75.2 75.2 75.2  
(DATUM = 600.00) FLOOD STAGE = 87.0

EAU CLAIRE RIVER

FALL CREEK N/A 0.8 0.8 0.8 0.8 0.8 0.8 0.8 0.8  
(DATUM = 830.00) FLOOD STAGE = 11.0

CHIPPEWA RIVER

EAU CLAIRE 758.8 758.8 758.8 758.8 758.8 758.8 758.8 758.8 758.7  
(DATUM = 0.00) FLOOD STAGE = 773.0

DURAND 2.9 2.9 2.9 2.9 2.8 2.8 2.8 2.7 2.7  
(DATUM = 692.57) FLOOD STAGE = 13.0

SOUTH FORK CROW RIVER

MAYER MN 2.4 2.4 2.3 2.3 2.3 2.2 2.2 2.2 2.1  
(DATUM = 925.79) FLOOD STAGE = 11.0

DELANO MN 6.5 6.4 6.4 6.4 6.4 6.3 6.3 6.2 6.2  
(DATUM = 900.00) FLOOD STAGE = 16.5

CROW RIVER

ROCKFORD MN 2.7 2.7 2.6 2.6 2.6 2.6 2.6 2.5 2.5  
(DATUM = 893.08) FLOOD STAGE = 10.0

REDWOOD RIVER

REDWOOD FALLS 2.1 2.1 2.1 2.0 2.0 2.0 2.0 2.0 1.9  
(DATUM = 972.33) FLOOD STAGE = 6.0

COTTONWOOD RIVER

NEW ULM 2.2 2.2 2.1 2.1 2.1 2.1 2.1 2.1 2.0  
(DATUM = 796.83) FLOOD STAGE = 11.0

SAUK RIVER

ST CLOUD 1.5 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.3  
(DATUM = 1034.63) FLOOD STAGE = 6.0

LONG PRAIRIE RIVER

LONG PRAIRIE 1.8 1.7 1.7 1.7 1.7 1.7 1.6 1.6 1.6  
 (DATUM = 1281.74) FLOOD STAGE = 6.0

LOCATION	-----FLOOD STAGES-----						DEP FROM NORMAL	
	MINOR STG	PCT	MODERATE STG	PCT	MAJOR STG	PCT	OF REACHING FLOOD STAGE	
Redwood River at Redwood Falls 3SW (RWDM5)	6	>98%	15	3%	16	1%	81%	GREATER
Cottonwood River at New Ulm 2SSE (NWUM5)	11	>98%	13	96%	16	52%	74%	GREATER
Minnesota River at Montevideo (MVOM5)	14	>98%	16	>98%	17.5	67%	62%	GREATER
Minnesota River at Granite Falls (GTEM5)	888	>98%	893	34%	896	8%	76%	GREATER
Minnesota River at New Ulm 2SE (NULM5)	796	>98%	800	>98%	805	34%	47%	GREATER
Minnesota River at Mankato River (MNKM5)	22	82%	25	52%	30	3%	73%	GREATER
Minnesota River at Henderson (HENM5)	732	>98%	736	65%	739.5	6%	74%	GREATER
Minnesota River at Jordan (JDNM5)	25	>98%	28	95%	34	14%	76%	GREATER
Minnesota River at Shakopee (SKPM5)	708	>98%	713	>98%	720	19%	67%	GREATER
Minnesota River at Savage (SAVM5)	702	>98%	710	93%	712	76%	63%	GREATER
Sauk River at St Cloud 3W (STCM5)	6	82%	7	32%	9	4%	65%	GREATER
South Fork Crow River at Mayer (MAYM5)	11	>98%	15	75%	16	62%	78%	GREATER
South Fork Crow River at Delano (DELM5)	16.5	>98%	17.5	88%	18.5	78%	83%	GREATER
Crow River at Rockford (RKFM5)	10	96%	12	80%	14	59%	79%	GREATER
St Croix River at Stillwater (STLM5)	87	88%	88	77%	89	62%	80%	GREATER
Mississippi River at Aitkin 2E (ATKM5)	12	>98%	15	65%	18	21%	55%	GREATER
Mississippi River at Fort Ripley 1N (FTRM5)	10	95%	12.5	44%	26	---	62%	GREATER
Mississippi River at St Cloud (SCOM5)	9	70%	10	39%	11	18%	53%	GREATER
Mississippi River at Anoka (AKAM5)	838	68%	840	27%	841	18%	60%	GREATER
Mississippi River at Minneapolis WTP (MSPM5)	16	45%	16.5	29%	17	27%	39%	GREATER
Mississippi River at St Paul - Smith Ave Brdg (STPM5)	14	96%	15	95%	17	86%	76%	GREATER
Mississippi River at Hastings 1NW - L&D 2 (HSTM5)	15	>98%	17	95%	18	90%	67%	GREATER
Mississippi River at Red Wing L&D 3 (RDWM5)	680.5	95%	681.5	88%	683	73%	74%	GREATER
Mississippi River at Red Wing (REDM5)	14	>98%	15	90%	16	86%	76%	GREATER
Long Prairie River at Long Prairie River (LGPM5)	6	96%	8	32%	10	---	66%	GREATER
EAU CLAIRE RIVER AT FALL CREEK 3N (FLCW3)	11	65%	14	36%	17	19%	45%	GREATER
CHIPPEWA RIVER AT EAU CLAIRE (ECLW3)	773	42%	776	14%	777	13%	20%	GREATER

CHIPPEWA RIVER AT DURAND (DURW3)

13 70% 15.5 29% 17 14% 33% GREATER

STG = STAGE (FEET)

PCT = PERCENT

--- = DISTRIBUTION COMPLETELY BELOW THIS STAGE

DEP = DEPARTURE

DUE TO THE SEPTEMBER RAINS...WATER LEVELS AND SOIL MOISTURE WERE STILL ABOVE NORMAL AS WE WENT INTO THE WINTER FREEZE IN MID TO LATE NOVEMBER. THIS BEGAN TO SET THE STAGE FOR AN INCREASED THREAT FOR FLOODING WITH A SPRING MELT.

IN ADDITION TO THE WET SOILS...PRECIPITATION FOR NOVEMBER THROUGH MID JANUARY HAS BEEN ABOVE NORMAL FOR CENTRAL AND SOUTHERN MINNESOTA AS WELL AS WEST CENTRAL WISCONSIN. LIQUID AMOUNTS FOR RANGE FROM 2.75 INCHES IN NORTH CENTRAL MINNESOTA OR THE UPPER MISSISSIPPI BASIN TO NEARLY 6.25 INCHES IN THE TWIN CITIES AREA AND THE SOUTHEASTERN PART OF MINNESOTA. FOR WEST CENTRAL WISCONSIN...AMOUNTS RANGE FROM 3.75 TO AROUND 5 INCHES ACROSS A BROAD PART OF THE UPPER CHIPPEWA BASIN TO NEARLY 5.5 INCHES TOWARD DURAND. THESE VALUES ARE ROUGHLY NORMAL FOR THE UPPER MISSISSIPPI RIVER AND CHIPPEWA RIVER IN WISCON TO AROUND 150 PERCENT OF NORMAL FOR THE FAR UPPER MINNESOTA BASIN IN WEST CENTRAL MINNESOTA AND AN AREA OF AROUND 150% OF NORMAL IN THE LOWER MINNESOTA RIVER BASIN.

GIVEN THE NORMAL TO ABOVE NORMAL RAINFALL OVER THE PAST SIX MONTHS...WE DO NOT HAVE DROUGHT CONCERNS IN CENTRAL AND SOUTHERN MINNESOTA AS WELL AS WEST CENTRAL WISCONSIN. FOR MORE INFORMATION ON THE DROUGHT MONITOR PLEASE REFERENCE [WWW.DROUGHT.UNL.EDU/DM/MONITOR.HTML](http://WWW.DROUGHT.UNL.EDU/DM/MONITOR.HTML)

PRIOR TO FREEZE UP...STREAMS AND CREEKS AS WELL AS MAINSTEM RIVERS WERE RUNNING ABOVE TO MUCH ABOVE NORMAL LEVELS FOR LATE NOVEMBER. THIS HAS ALLOWED THICK ICE TO FORM IN MANY AREAS AND ICE JAMS WILL BE A CONCERN DURING BRIEF WARM UPS AND ESPECIALLY DURING THE SPRING MELT.

WHILE WE STILL HAVE A SEVERAL MONTHS OF WINTER LEFT...EARLY INDICATIONS ARE THAT WE WILL LIKELY SEE WIDESPREAD FLOODING ACROSS MUCH OF CENTRAL AND SOUTHERN MINNESOTA ESPECIALLY IN THE MINNESOTA...CROW AND MISSISSIPPI RIVER FOR ST PAUL AND DOWNSTREAM. ONE DIFFERENCE FROM THE PAST TWO YEARS IS THE UPPER MISSISSIPPI SYSTEM...FROM MINNEAPOLIS INTO THE HEADWATERS...HAS AN AN ABOVE NORMAL THREAT FOR FLOODING. THIS INCLUDESTHE SMALLER TRIBUTARIES OF THE LONG PRAIRIE AND SAUK RIVERS. IN ADDITION...IN WEST CENTRAL WISCONSIN FOR THE FIRST TIME IN SEVERAL YEARS...THE CHIPPEWA RIVER SYSTEM ALSO HAS THE INCREASED POTENTIAL TO SEE HIGHER LEVELS WITH THE SNOW MELT.

IN ADDITION TO RIVER FLOODING...WIDESPREAD OVERLAND OR AREAL FLOODING WILL ALSO BE A CONCERN ESPECIALLY IN THE SMALLER CREEKS AND STREAMS. SOME RIVERS THAT EXPERIENCED SIGNIFICANT FLOODING IN SEPTEMBER THAT HAVE A HEIGHTENED CONCERN INCLUDE THE LITTLE COTTONWOOD...WATONWAN...BLUE EARTH...COBB...LE SUEUR... CANNON AND STRAIGHT SYSTEMS. ADDITIONAL RIVERS OF CONCERN INCLUDE ACROSS MINNESOTA...THE LAC QUI PARLE...POMME DE TERRE...CHIPPEWA...BUFFALO CREEK...AND ZUMBRO SYSTEM. FOR WISCONSIN THE APPLE...RUSH...EAU GALLE...HAY...FLAMBEAU AND JUMP RIVERS COULD ALSO SEE SOME HIGHER LEVELS THIS SPRING.

THE CLIMATE OUTLOOK FOR THE FEBRUARY SHOWS BELOW NORMAL TEMPERATURES EVERYWHERE AND ABOVE NORMAL PRECIPITATION

FOR WISCONSIN AND THE NORTHERN HALF OF MINNESOTA. THE  
SOUTHERN HALF OF MINNESOTA HAS EQUAL CHANCES FOR ABOVE  
OR BELOW NORMAL PRECIPITATION. THE CLIMATE OUTLOOK FOR  
FEBRUARY THROUGH APRIL SHOWS BELOW NORMAL TEMPERATURES  
AND EQUAL CHANCES FOR ABOVE OR BELOW NORMAL PRECIPITATION.

FOR MORE INFORMATION ON THE CLIMATE OUTLOOKS REFERENCE  
[WWW.CPC.NCEP.NOAA.GOV](http://WWW.CPC.NCEP.NOAA.GOV)