



Red River and Devils Lake Basin – 2017 Spring Flood Outlook

Discussion Points 1/26/2017

prepared by



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This outlook is for the U.S. portion of the basin based on conditions as of Thursday, 1/26/17. All graphics and related discussion will be posted to weather.gov/fgf by Friday morning. The next update is due out 2/16/17.

Bottom Line up Top!

- **The threat for significant, impactful, snowmelt flooding is very high for the Devils Lake Basin.** A wet summer and fall, along with high winter snowpack has set the stage for near record runoff into the lakes. Devils and Stump Lakes could rise 3 to 4 feet above current levels through the coming spring-summer runoff season.

- **The threat is moderate to high, generally above the historical risk for most river points, somewhat higher still for eastern ND tributary points.** Generally high soil moisture and base streamflow in most areas, coupled with either high snowfall or freezing rain/sleet has created a base for high runoff potential. Minor to moderate flooding is expected in most areas, with an increased risk for moderate to major flooding across east-central and northeast ND into far northwest MN.

- **The second half of winter should continue to be cooler and snowier than average.** The NWS/CPC expects the period, Feb-Mar-Apr, to have temperatures near to below average and precipitation near to above average.

Long Story Short: Significant flood risk for most areas... highest threat across northeast ND.

Status of Key Conditions:

1. Base Streamflow: Above normal. USGS analysis and streamgage reports indicate that the Red River and its ND and MN tributaries are ice covered and/or flowing at 70 to 90 percent of their long term normal levels.

2. Soil Moisture at Freeze-up: Above to much-above normal. The rain and snow (liquid) measured across the Basin from Oct 1st through Jan 26th has ranged from 3 to 6 inches, or from 1 to 3 inches above the long term normals. Soil moisture levels and fall season precipitation surpluses rival levels last seen in the 2010-2011 fall/winter period, with soil moisture levels at freeze-up ranging from 75-99 percent of normal across the Basin.

3. Frost Depth: Near normal. The late December and early January cold snaps drove frost to from 12 to 24 inches in most areas, with somewhat lesser amounts in areas of deep and early snowpack. River and lake ice reports are approaching normal ranges.

4. Winter Snowpack/SWE: Near to above normal. Winter Snowpack and Snow Water Equivalent (SWE) are highest across northern areas and lowest in the south. SWE ranges from around 1 inch near Fargo, 2 inches near Grand Forks to from 3.5 to 4.5 inches in the Devils Lake Basin across to far northwest Minnesota.

By the Numbers:

DEVILS AND STUMP LAKES LONG-RANGE PROBABILISTIC OUTLOOK

VALID JANUARY 22, 2017 - SEPTEMBER 30, 2017

LOCATION	95%	90%	75%	50%	25%	10%	05%
CREEL BAY	1452.7	1452.9	1453.3	1453.6	1454.3	1454.8	1455.1
EAST STUMP LAKE	1452.7	1452.9	1453.3	1453.6	1454.3	1454.8	1455.1

THE CURRENT HEIGHT OF DEVILS LAKE AT CREEL BAY IS NEAR 1450.3 FEET
THE CURRENT HEIGHT OF STUMP LAKE NEAR LAKOTA IS NEAR 1450.3 FEET

Color code: Below Minor Moderate Major Flood of Record

CHANCE OF EXCEEDING STAGES AT MAINSTEM RED RIVER LOCATIONS

VALID 1/29/2017 - 4/29/2017

LOCATION	95%	90%	75%	50%	25%	10%	05%
WAHPETON	10.4	11.2	11.5	12.4	14.1	16.0	17.1
HICKSON	21.7	23.9	26.1	27.7	32.1	34.9	36.1
FARGO	21.0	23.5	26.4	29.6	32.9	36.4	38.2
HALSTAD	20.1	24.0	27.1	31.0	35.6	37.5	39.0
GRAND FORKS	33.1	35.7	39.7	43.0	45.1	47.5	49.4
OSLO	33.0	33.9	34.8	35.9	36.9	37.7	38.6
DRAYTON	35.6	38.2	40.4	41.3	42.6	43.3	43.8
PEMBINA	46.3	47.7	50.0	51.3	52.9	53.6	53.8

Minnesota Tributaries:

South Fork Buffalo River.....							
SABIN	13.2	13.7	14.6	15.2	15.9	16.8	18.4
Buffalo River.....							
HAWLEY	7.5	7.9	8.6	9.2	9.9	10.4	11.0
DILWORTH	16.4	18.0	19.6	21.0	22.2	23.0	24.8
Wild Rice River.....							
TWIN VALLEY	6.3	6.6	7.1	8.6	9.7	11.0	12.1
HENDRUM	19.8	21.1	24.0	27.3	29.6	31.2	32.5
Marsh River.....							
SHELLY	10.0	10.6	12.2	13.8	16.6	18.6	20.1
Sand Hill River.....							
CLIMAX	11.8	12.1	15.8	19.9	24.8	26.8	30.5
Red Lake River.....							
HIGH LANDING	10.0	10.7	12.6	13.1	13.3	13.3	13.6
CROOKSTON	13.6	14.5	16.4	19.2	21.7	23.2	25.1
Snake River.....							
ABOVE WARREN	64.7	64.8	65.0	65.9	66.9	68.2	68.5
ALVARADO	105.2	105.5	106.5	108.6	109.4	109.8	110.3
Two Rivers River.....							
HALLOCK	805.4	805.9	807.5	808.2	809.2	810.3	811.0
Roseau River.....							
ROSEAU	11.7	12.3	13.3	14.7	16.1	17.0	17.4

North Dakota Tributaries:

Wild Rice River.....							
ABERCROMBIE	7.1	9.6	13.0	16.3	19.4	22.9	24.4
Shyenne River.....							
VALLEY CITY	12.2	12.7	13.5	14.2	17.5	19.5	20.7
LISBON	12.0	12.4	13.2	14.3	17.1	19.5	20.4
KINDRED	15.1	15.7	17.1	18.4	20.3	21.1	21.1
WEST FARGO DVRSN	17.7	18.3	18.9	20.5	22.7	23.1	23.2
HARWOOD	879.7	881.2	883.2	887.5	890.2	891.6	892.0
Maple River.....							
ENDERLIN	8.4	9.0	10.0	10.8	12.0	12.9	13.9
MAPLETON	902.1	904.3	905.7	906.7	908.1	908.7	909.3
Goose River.....							
HILLSBORO	8.2	9.5	12.0	13.6	14.5	15.9	16.4
Forest River.....							
MINTO	6.5	6.7	7.4	8.1	9.0	9.6	9.9
Park River.....							
GRAFTON	12.8	13.7	14.7	16.2	17.8	18.8	20.0
Pembina River.....							
WALHALLA	11.0	11.3	12.5	13.6	15.1	15.8	16.4
NECHE	19.8	20.0	21.1	21.4	21.5	21.6	21.6