

Red River and Devils Lake Basin - 2013 Spring Flood Outlook

Talking Points for 3/21/2013

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This outlook is based on conditions as of 3/21/13. Official textual and graphical outlook products are available at weather.gov/fgf and at devilslake.noaa.gov.

Bottom Line up Top: A substantial flood is likely, similar to recent 2010/2011 scale floods.

Way above normal new snowfall and snow water content was received since Feb outlook, with greatest increases again in the far south and far north portions of the basin. Water content of 6 inches or more is common south/east of Wahpeton (south basin) and along the CanAm border.

There is now a Major flood risk along most of the mainstem Red River, with significant breakout/overland flows to be expected. Portions of the I-29 corridor could be impacted.

There is now a Minor to Moderate, and some Major flood risk along most tributary streams and rivers in eastern ND and Northwest MN... especially nearest the Red River.

Devils Lake should see more appreciable inflows and a 2.0 to 2.5 foot overall rise, with overland flooding increasing across northern portions of the basin.

Cool and snowy/wet conditions should delay the initial runoff into early April... then the risk for a rapid warm-up and convective rain events will increase – a potentially volatile mix!

*community infrastructures are generally prepared to mitigate against these scales of flooding, while biggest impacts may be to certain bridges and to “near river” transportation corridors, as well as in rural areas due to overland flooding.

Key points for the Red River Basin, from south to north: (use page 4 color codes as guide)

In the far South Basin: 10% risk of Flood of Record!

- Wahpeton-Breckenridge on the Red has >95% risk of Major flooding - 50% risk of 17.2 ft.
- Fargo-Moorhead on the Red has >95% risk of Major flooding - 50% risk of 38.1 ft.
- Abercrombie on the ND Wild Rice has >95% risk if Major flooding - 50% risk of 24.7 ft.
- Sheyenne River, Kindred and Blo had Moderate to Major risk. Harwood on edge of FOR.

Expect significant overland flooding to develop, especially in Wilkin and southern Clay. Some breakout flow from the Bois de Sioux into the Wild Rice south of Wahpeton. Sheyenne should be somewhat less troublesome than in 2011. Expect I-29 trouble spots.

In the mid to upper Sheyenne Basin: Low risk at and above Lisbon. Expect some breakout flows and overland flooding in far northwest headwaters (western Eddy Co.). Else, at this time Baldhill Dam is expected to be able to regulate slower/lesser overall flow/volume.

In the central Red River Basin: Somewhat increased risk of Moderate to Major flooding.

- Major flood levels (low edge) expected at Halstad, Grand Forks, and Oslo on the Red River.
- Mainly Moderate flood flows expected on central RRV tributaries – but all up significantly!
- Grafton on the Park River now has a 48% risk of Major flooding – 50% risk of 14.5 ft.

The upper Red Lake River has significantly more snow-water than earlier, but headwaters areas should absorb this to a degree. Otherwise the rest of the area is a bit above normal snow-water. Still should expect some breakout flows and overland flooding near streams and ditches.

In the Minnesota Lakes: Expect significant localized runoff. Significant snowpack and snow-water should produce local runoff into area lakes and sloughs, with areas of overland and out of bank flows. Area roads and bridges are likely to see some impact periods.

In the Roseau River Basin: Expect significant localized runoff. Significant snowpack and snow-water should produce local runoff and some ponding to overland flows. Most area soils are more porous and will allow for increased infiltration rates. **Roseau at 50% risk of 16.4 ft.** (Moderate). On edge of Major flooding if heavy rain events materialize!

In the Pembina Basin and northern Red River Basin: Big snowpack and runoff concerns!

- Pembina on the Red River now has a >95% risk of Major flooding - 50% risk of 52.0 ft.
- Neche on the Pembina River now has a >95% risk of Major flooding - 50% risk of 21.4 ft.
- Hallock on the Two Rivers River now has a 88% risk of Moderate flooding.
- Drayton and Pembina risk levels along the Red River here are looking similar to 2011 levels.

Significant snowpack from the headwaters of the Pembina River (in Manitoba) through northern Pembina County should create significant riverine flows and contribute to a high potential for breakout flows across far north central into northeast Pembina County.

Key points for the Devils Lake Basin: This outlook now indicates that Devils Lake and Stump Lake could rise (50 percent probability) around 2 to 2.5 feet, due to a somewhat above normal topsoil wetness and a much above normal snowpack. [Creel Bay gauge at 1451.58 on 3/21/13]

-- Last year, these lakes dropped nearly 3 feet from their 2011 record height, freeing up some 30,000 acres of farmland... much of which could be lost again this year.

-- Such high inflows will likely mean some carryover rises into next year, as summertime evaporation and mechanical pumping will likely not be able to take all this off in this year alone.

Next steps:

Community/County scale planning and coordination continues, while networks continue to monitor new precipitation and prepare for onset of snowmelt runoff. Once runoff commences the river forecast effort shifts from probabilities to deterministic 7-10 day river forecasts.

Expect weekly thaw progress and runoff expectation (descriptive Hydrologic Outlooks - ESFFGF) reports each Friday, or more often if needed.

RED RIVER BASIN
LONG-RANGE PROBABILISTIC OUTLOOK
VALID MARCH 25, 2013 - JUNE 23, 2013

Location	Flood Stages (FT)			Minor		Moderate		Major	
	Minor	Mod	Major	CS	HS	CS	HS	CS	HS
RED RIVER OF THE NORTH.....									
WAHPETON	10.0	12.0	14.0	>95	54	>95	30	>95	12
HICKSON	30.0	34.0	38.0	>95	16	>95	8	25	<5
FARGO	18.0	25.0	30.0	>95	72	>95	32	>95	19
HALSTAD	26.0	32.0	37.5	>95	32	91	14	53	6
GRAND FORKS	28.0	40.0	46.0	>95	54	>95	32	50	9
OSLO	26.0	30.0	36.0	>95	62	>95	50	80	17
DRAYTON	32.0	38.0	42.0	>95	41	>95	30	41	11
PEMBINA	39.0	44.0	49.0	>95	46	>95	40	>95	19
MINNESOTA TRIBUTARIES.....									
SABIN		15.0	19.0	>95	66	79	12	24	<5
HAWLEY	7.0	9.0	11.0	>95	50	85	24	17	<5
DILWORTH	12.0	20.0	26.0	>95	69	>95	19	9	<5
TWIN VALLEY	10.0	12.0	14.0	50	14	25	<5	14	<5
HENDRUM	20.0	28.0	32.0	>95	51	79	21	24	<5
SHELLY	14.0	20.0	23.0	62	27	14	6	<5	<5
CLIMAX	20.0	25.0	30.0	87	21	54	8	24	<5
HIGH LANDING	12.0	12.5	13.0	72	28	67	24	62	19
CROOKSTON	15.0	23.0	25.0	>95	56	38	14	17	8
ABOVE WARREN	67.0	71.0	76.0	45	11	14	<5	<5	<5
ALVARADO	106.0	108.0	110.0	53	22	33	11	6	<5
HALLOCK	802.0	806.0	810.0	>95	58	88	38	14	<5
ROSEAU	16.0	18.0	19.0	53	22	35	12	25	12
NORTH DAKOTA TRIBUTARIES.....									
ABERCROMBIE	10.0	12.0	18.0	>95	45	>95	35	>95	16
VALLEY CITY	15.0	16.0	17.0	19	14	17	8	14	6
LISBON	15.0	17.0	19.0	38	8	24	<5	16	<5
KINDRED	16.0	19.0	20.5	91	21	54	9	28	<5
WEST FARGO DVRSN	18.0	20.0	21.0	>95	25	71	16	51	9
HARWOOD	884.0	886.0	891.0	90	21	77	17	28	8
ENDERLIN	9.5	12.0	14.0	58	21	8	8	<5	<5
MAPLETON	905.0	908.0	910.0	93	32	35	11	<5	<5
HILLSBORO	10.0	13.0	16.0	35	14	28	8	11	<5
MINTO	6.0	8.0	11.0	>95	30	77	11	<5	<5
GRAFTON	12.0	13.5	14.5	>95	19	80	<5	48	<5
WALHALLA	11.0	16.0	18.0	>95	17	6	<5	<5	<5
NECHE	18.0	19.0	20.5	>95	24	>95	21	>95	12

CHANCE OF EXCEEDING STAGES AT DEVILS LAKE AND STUMP LAKE LOCATIONS
VALID 3/18/2013 - 9/30/2013

LOCATION	95%	90%	75%	50%	25%	10%	05%
CREEL BAY	1453.1	1453.4	1453.7	1454.0	1454.5	1455.0	1455.6
STUMP LAKE	1453.1	1453.4	1453.7	1454.0	1454.5	1455.0	1455.6

Color code: Below Minor Moderate Major Flood of Record

CHANCE OF EXCEEDING STAGES AT MAINSTEM RED RIVER LOCATIONS:

VALID 3/25/2013 - 6/23/2013

LOCATION	95%	90%	75%	50%	25%	10%	05%
WAHPETON	15.4	15.5	16.5	17.2	18.6	20.0	20.5
HICKSON	34.2	34.8	35.4	36.8	38.0	39.3	39.4
FARGO	34.2	34.8	36.9	38.1	39.1	40.9	41.3
HALSTAD	31.9	32.3	35.6	37.7	39.0	39.9	40.3
GRAND FORKS	41.9	42.4	44.5	46.0	48.1	50.6	53.1
OSLO	35.3	35.5	36.4	37.1	38.0	38.9	39.9
DRAYTON	39.8	40.3	41.1	41.8	42.9	43.9	44.8
PEMBINA	49.2	50.0	51.0	52.0	52.9	53.8	54.4

Minnesota Tributaries:

South Fork Buffalo River.....							
SABIN	14.3	14.4	15.3	16.9	18.9	21.0	22.1
Buffalo River.....							
HAWLEY	8.4	8.6	9.2	9.8	10.4	11.7	12.3
DILWORTH	20.0	20.2	22.0	23.5	24.6	26.8	27.9
Wild Rice River.....							
TWIN VALLEY	7.5	8.0	8.9	10.0	12.1	14.5	16.0
HENDRUM	26.6	27.0	29.0	30.8	32.1	33.0	33.9
Marsh River.....							
SHELLY	9.4	10.0	12.8	15.7	19.1	21.6	22.8
Sand Hill River.....							
CLIMAX	18.2	19.4	23.0	26.6	29.9	36.9	38.9
Red Lake River.....							
HIGH LANDING	9.8	11.1	11.8	14.3	15.6	17.1	18.3
CROOKSTON	17.9	19.3	20.7	22.1	24.4	26.5	28.5
Snake River.....							
ABOVE WARREN	64.7	64.9	65.7	66.7	69.1	72.1	73.9
ALVARADO	102.6	103.3	104.9	106.3	108.5	109.7	110.5
Two Rivers River.....							
HALLOCK	804.9	805.9	806.8	807.9	809.3	810.6	810.9
Roseau River.....							
ROSEAU	12.7	13.2	14.0	16.4	19.2	21.1	21.6

North Dakota Tributaries:

Wild Rice River.....							
ABERCROMBIE	20.1	20.6	22.9	24.7	26.1	27.8	28.8
Sheyenne River.....							
VALLEY CITY	11.6	11.7	11.9	12.4	13.2	17.9	18.0
LISBON	11.9	12.2	12.7	14.0	16.9	20.7	22.5
KINDRED	15.5	16.2	17.1	19.4	20.7	21.2	21.2
WEST FARGO DVRSN	18.5	18.5	19.5	21.3	23.1	23.2	23.2
HARWOOD	883.5	884.6	887.1	889.4	891.4	892.1	892.2
Maple River.....							
ENDERLIN	8.3	8.4	9.2	9.6	10.3	11.6	13.4
MAPLETON	904.9	905.3	906.0	906.7	908.8	909.5	909.9
Goose River.....							
HILLSBORO	5.0	5.1	6.5	8.0	13.5	16.3	17.0
Forest River.....							
MINTO	6.4	7.0	8.2	8.9	9.7	10.2	10.6
Park River.....							
GRAFTON	12.7	12.8	14.1	14.5	16.0	17.0	18.0
Pembina River.....							
WALHALLA	12.6	12.9	13.4	14.2	14.8	15.7	16.1
NECHE	21.2	21.3	21.4	21.4	21.5	21.6	21.6