



Red River and Devils Lake Basins - 2024 Spring Flood Outlook

NWS Grand Forks • North Central River Forecast Center • March 14, 2024

This outlook is for the US portion of the basin and based on conditions through Monday, March 11, 2024. Visit our website at weather.gov/fgf/currentfloodoutlook for associated exceedance graphics, probabilities, and related discussions. This will be the last spring flood outlook for 2024.

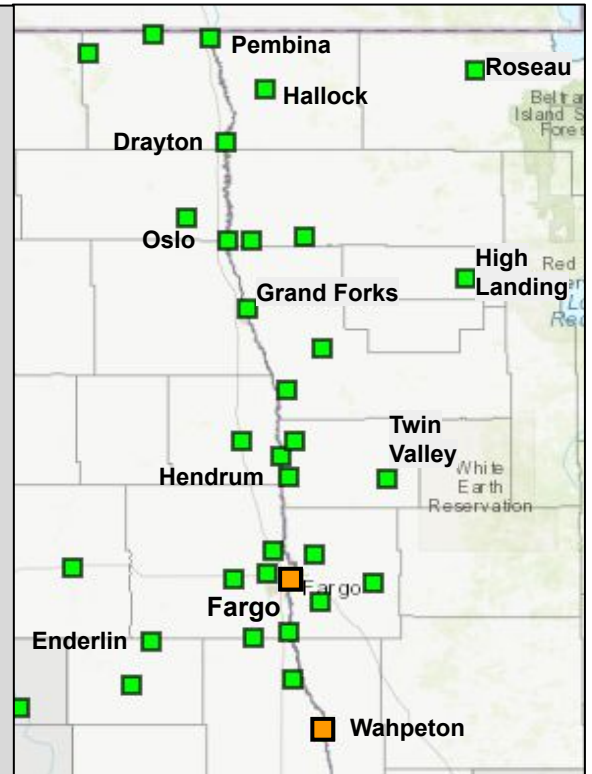
Key Message: The risk for significant (moderate or higher) flooding is very low with this outlook issuance, running below long-term historical averages across the Red River Basin (US portion).

Key Points:

- Isolated minor spring flooding with this outlook (50% exceedance probability) for a couple locations. Note: Flood risk does not account for ice jams.
- Rainfall is the main flood risk factor at this point. Heavy rainfall would lead to higher end flooding scenarios.
- Snowfall has been well below normal, with precipitation near to above normal from rain and ice events. Soil moisture is below normal across the basin.
- Majority of the remaining snowpack has melted into the soils and is accounted for in this outlook.

Flood Risk Indicated as > 50% of category:

- Major
- Moderate
- Minor
- < 50%



Snowmelt Flood Components:

- 1. Fall + Winter Precipitation: Near to above normal.** Winter snowfall was well below normal, however precipitation was near to above normal for the majority of the basin due to rain and ice events (exception being the Devils Lake basin). Soil moisture is lower than normal across much of the basin with moderate to severe drought conditions across the north and abnormally dry conditions elsewhere.
- 2. Base Streamflow: Near to above normal.** At the end of December, USGS analyses indicated that the Red River mainstem and its tributaries were flowing near to slightly higher than normal.
- 3. Frost Depth: Shallower than normal.** January cold formed a deep frost layer across much of the basin; however, February/early March warmth has allowed for some thawing to begin, especially in the south. Lake/river observations indicate ice cover is thinner and less consistent than normal due to mild temperatures.
- 4. Snowpack and Associated Water Content: Much below normal.** Snowfall since Dec. 1st is running much below normal (10-50 percent of normal), lowest across the southern two-thirds of the basin. Much of the snowpack has melted and infiltrated into the soils through early March.
- 5. Future Conditions:** Climate outlooks favor above normal temperatures through spring. This will continue to melt any lingering snowpack and favor higher probabilities of rain instead of snow.

DEVILS LAKE AND STUMP LAKE

Valid March 11, 2024 - September 30, 2024

DEVILS LAKE	95%	90%	75%	50%	25%	10%	5%
Creel Bay	1449.5	1449.5	1449.6	1449.8	1450.0	1450.5	1450.9
Eastern Stump Lake	1449.5	1449.5	1449.6	1449.8	1450.0	1450.5	1450.9

Devils Lake and Stump Lake are currently at ~1449.1 ft (zero datum 1400.00 NGVD29).

RED RIVER AND TRIBUTARIES

Valid March 18, 2024 - June 16, 2024

RED RIVER MAINSTEM	95%	90%	75%	50%	25%	10%	5%
Wahpeton	6.4	7.4	9.4	11.0	12.7	14.1	14.8
Hickson	12.4	13.3	16.4	20.1	26.2	31.1	33.7
Fargo	15.6	15.9	17.6	19.9	25.6	31.5	33.7
Halstad	9.2	9.2	11.2	16.2	23.8	31.1	34.3
Grand Forks	19.6	19.6	19.7	22.3	30.9	40.8	42.8
Oslo	16.8	16.8	16.8	21.7	31.4	34.9	35.8
Drayton	18.8	18.8	18.9	22.9	30.0	38.8	40.2
Pembina	24.7	24.7	24.8	30.4	38.3	46.4	48.3

Note:
Probabilities for all river points do not account for ice effects such as ice jams, etc.
Higher stages than depicted may occur.

MINNESOTA TRIBUTARIES	95%	90%	75%	50%	25%	10%	5%
South Fork Buffalo River							
Sabin	5.8	8.1	10.2	12.2	13.7	14.7	15.0
Buffalo River							
Hawley	4.2	4.2	4.7	5.6	7.1	8.2	9.0
Dilworth	5.7	6.0	9.4	12.4	17.5	19.2	20.8
Wild Rice River							
Twin Valley	2.9	3.3	3.8	4.8	6.8	8.8	9.5
Hendrum	6.3	6.3	9.2	15.2	22.5	27.3	28.3
Marsh River							
Shelly	5.5	5.5	5.6	7.7	9.6	12.6	14.2
Sand Hill River							
Climax	7.4	7.5	7.6	9.0	11.9	19.1	20.6
Red Lake River							
High Landing	2.9	2.9	3.5	4.5	6.3	8.0	9.0
Crookston	7.3	7.3	7.7	10.1	14.1	19.1	21.0
Snake River							
Above Warren	62.1	62.1	62.6	63.4	64.2	65.9	66.5
Alvarado	98.0	98.1	98.8	100.8	104.7	107.4	108.6
Two Rivers River							
Hallock	796.8	796.9	798.8	801.0	803.8	807.4	808.0
Roseau River							
Roseau	7.2	7.3	8.2	9.3	11.2	15.0	16.6

Legend:
Below Flood Stage
Minor
Moderate
Major
Flood of Record

NORTH DAKOTA TRIBUTARIES	95%	90%	75%	50%	25%	10%	5%
Wild Rice River							
Abercrombie*	11.2	11.2	13.7	16.9	23.2	26.3	28.4
Sheyenne River							
Valley City	5.6	5.6	5.6	6.8	9.0	10.8	12.7
Lisbon	4.8	4.8	4.8	5.9	8.1	11.0	13.2
Kindred	7.4	7.4	7.4	8.0	10.2	13.5	17.3
West Fargo Diversion	10.3	10.3	10.3	10.8	11.7	14.5	17.2
Harwood	74.5	74.5	74.5	75.8	79.7	84.6	90.5
Maple River							
Enderlin	4.1	4.1	4.8	6.0	7.8	10.2	11.7
Mapleton	12.1	12.1	12.1	13.6	18.2	21.3	22.2
Goose River							
Hillsboro	2.9	2.9	3.0	3.9	5.4	7.4	9.7
Forest River							
Minto	2.0	2.0	2.0	2.5	3.4	4.9	5.5
Pembina River							
Walhalla	3.0	3.2	3.7	4.4	5.5	7.1	7.7
Neché	4.6	4.9	5.7	7.2	9.6	13.5	14.8

* Flood stages increased by 10.0 ft October 2023