

**MONTHLY REPORT OF HYDROLOGIC CONDITIONS**

**WFO Caribou, Maine**

REPORT FOR:  
MONTH YEAR

**February 2025**

TO: Hydrologic Information Center, W/O S31  
NOAA's National Weather Service  
1325 East West Highway  
Silver Spring, MD 20910-3283

SIGNATURE

**James Sinko - Meteorologist  
Hydrology Program Manager**

DATE

**March 10, 2025**

*When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).*

An X inside this box indicates that no flooding occurred within this hydrologic service area.

**February 2025**

February 2025 was a mixed bag of precipitation near to slightly above normal north with below normal precipitation in southern portions of the forecast area. Temperatures were mainly below normal thanks to persistent cold shots across the area. We remained in a weak negative ENSO. The North Atlantic Oscillation (NAO) monthly mean was +1.60 SD and the Pacific North American Pattern (PNA) monthly mean at +1.41 SD. Overall, the pattern featured significantly lower heights over the North Atlantic. At the same time the positive PNA pattern was tampered with higher height anomalies generally over the SW United States and Alaska. This resulted in weak ridging in the Western United States and the weak long wave troughing in the Eastern United States. The troughing was so weak that it generally was an overall zonal pattern resulting in progressive systems with lack of precipitation. However, the pattern did support two storm systems that produced enough precipitation to put some locations around normal with other locations below normal. Snowpack and river ice growth was supported in this pattern. More details discussed below...

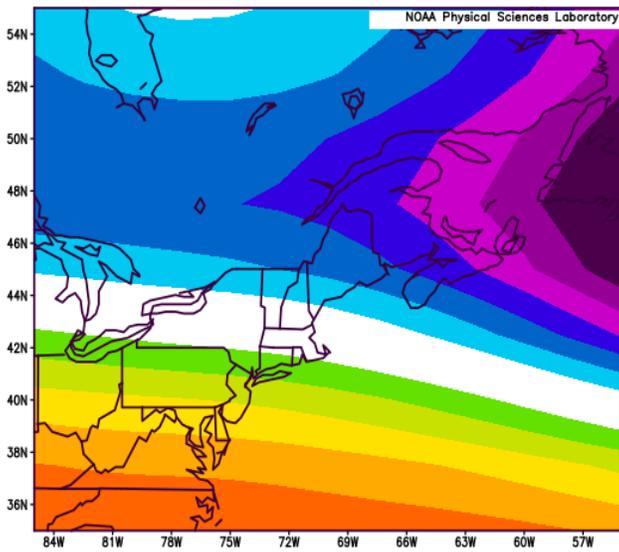


Figure 1: 500mb Geopotential Height (m) Anomalies (1991-2020 Climo) February 2025

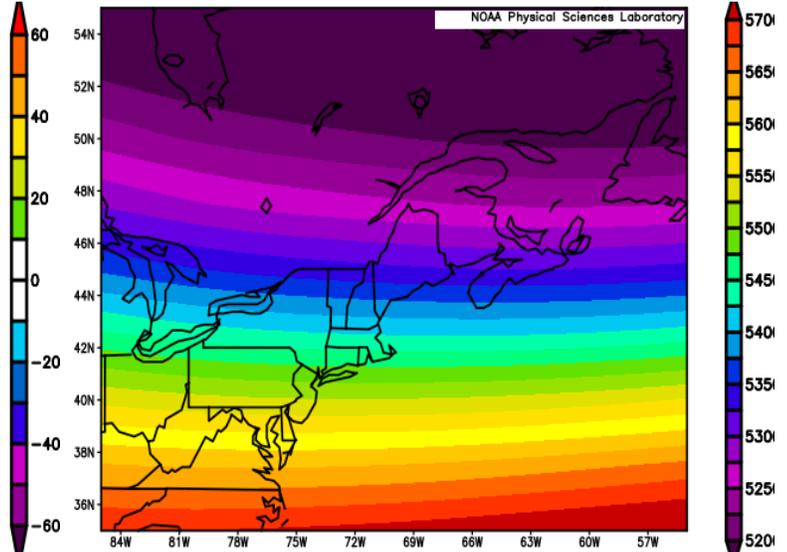


Figure 2: 500mb Geopotential Height (m) Composite Mean February 2025

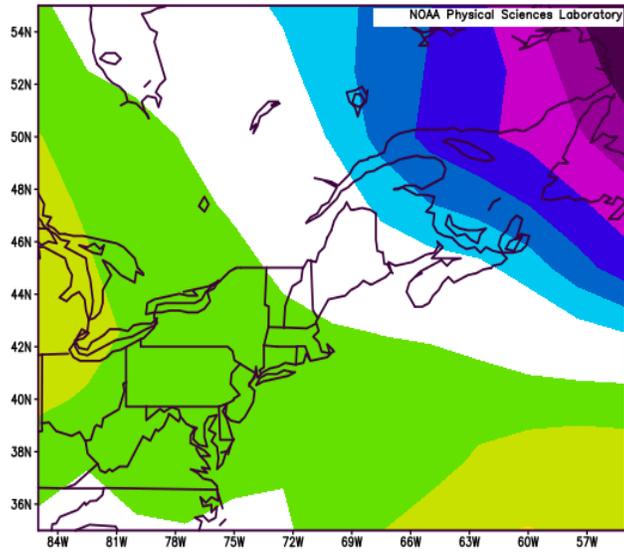


Figure 3: Sea Level Pressure (mb) Anomalies (1991-2020 Climo) February 2025

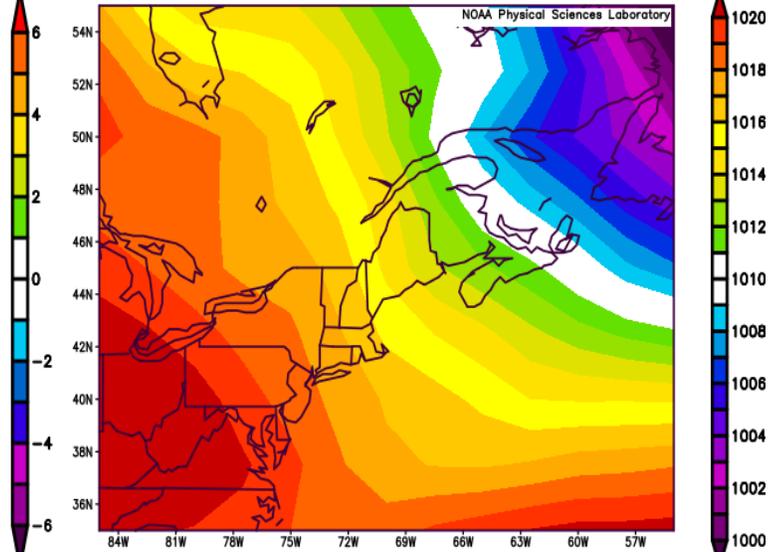


Figure 4: Sea Level Pressure (mb) Composite Mean February 2025

Figure 1-4 Source: [NOAA Physical Sciences Laboratory](#)

### Precipitation Totals for Select Locations (All Units in Inches)

Location	Total Precip	Normal Precip	Departure from Normal	% of Normal	Snowfall	Normal Snowfall	Departure from Normal	Greatest Snow Depth	Monthly Average Snow Depth
Frenchville*	0.93	0.87	0.06	106.9%					
Fort Kent	2.68	2.34	0.34	114.5%	22.2	21.0	1.2	27	15.6
Van Buren	2.36	2.27	0.09	104.0%	31.4	20.0	11.4	25	14.7
Caribou	3.12	2.42	0.70	128.9%	35.3	25.3	10.0	18	10.6
Houlton	1.91	1.95	-0.04	97.9%					
Millinocket*	2.09	2.13	-0.04	98.1%	23.0			16	8.6
Greenville*	2.90	2.41	0.49	120.3%					
Moosehead*	2.76	2.27	0.49	121.6%	38.0	21.6	16.4	30	20.9
Dover-Foxcroft	2.88	2.76	0.12	104.3%	24.0	19.8	4.2	18	12.4
Corinna	2.03	2.82	-0.79	72.0%	15.3	17.2	-1.9	10	7.5
Bangor	1.85	2.38	-0.53	77.7%	21.3	17.5	3.8	19	13.0
East Surry	2.81	3.58	-0.77	78.5%	20.1			15	11.6
Robbinston*	3.01	4.17	-1.16	72.2%	19.2	21.9	-2.7	15	12.2
Topsfield*	2.57	3.62	-1.05	71.0%	20.3	27.4	-7.1	12	7.4

\*Millinocket snowfall measured at CoOp site, not the ASOS site. \*Moosehead Site is in GYX CWA. \*Topsfield Records date back to 2000. \*Robbinston Records dates back to 1994. \*Greenville data gap between 1975 and 1999. \*Baileyville is a partial complete record to 1917. \*Frenchville ASOS has documented issues with precipitation measurements in the winter months.

**Precipitation** ranged from Precipitation was generally 70 to 100 percent of normal from the Central Highlands southward, and up to 130 percent of normal further north. Nearly all of this precipitation fell in the form of snow from the central highlands northward. To the south, precipitation fell mostly as a mix of snow, sleet, and/or freezing rain. No significant rain events occurred during the month. **Snowfall** was above normal regionwide, with the largest positive departures occurring in the north. In Caribou, 35.3 inches of snow fell during the month. This was 10.0 inches above average, the 13th snowiest February on record, and the snowiest February since 2021 (38.0 inches). The two most significant events of the month came in quick succession, with one on the 13th, and another on the 16th and 17th. Snowfall amounts greater than 10 inches occurred in both events north of the Katahdin region. Both events saw mixed precipitation in the Bangor region and Downeast. The 16th and 17th event was the larger of the two, with 18 inches of snow falling near Rockwood and 16 inches of snow in Limestone. Up to 0.10 inch of freezing rain and up to 1.0 inch of sleet fell over Downeast Maine and the Bangor region on top of several inches of snow. At the start of the month, **Snow Depth** was just 3 to 9 inches in most places, with 12 to 18 inches west of Route 11 towards the Quebec border. The snow and consistent cold allowed snowpack to build to 15 to 35 inches across the north, with the highest amounts towards the Quebec border. The Bangor region and Downeast saw snow depths build to 6 to 15 inches by the end of the month, with the lowest amounts in Coastal Washington County. Snow water equivalent amounts at the end of the month were generally 2 to 3 inches for the Bangor Area and Downeast. Further north, snow water equivalent amounts were generally 3 to 6 inches, with up to 8 inches in the higher terrain towards the Quebec border.

Looking at the **Drought Monitor** at the start of the month, Moderate Drought (D1) conditions existed south and east of a line from Dexter to Medway to Danforth. Abnormally Dry (D0) conditions were present to the north and west, except across the Saint John Valley and near the Quebec border where no drought is present. These conditions were unchanged thanks to frozen grounds.

**Streamflows** continued to remain slightly below normal to well below normal across the entire area. In terms of **Water Storage** the Penobscot River system ended the month at 45.1% full which was 17.8% above long term average. Ripogenus Dam storage finished the month at around 13 Billion Cubic Feet of water above the dam which was within normal ranges for February. The Union River storage finished the month at 62.6% full which was 24.6% above long term averages.

In terms of **River Ice** solid ice growth continued throughout the month with most rivers becoming 80-100% ice covered by the end of the month. River ice was solid into the coastal basins including ice growth well into the tidal sections of many rivers along the Downeast coast. Towards the end of the month ice growth basically came to an end but maintaining of the ice was kept thanks to the cold temperatures. No movement was noted on any river in the forecast area. Much of the ice quality this year across the state is white/grey ice. There is some indication of anchor ice in some spots with black ice reported in some locations.

**Ice thickness reports below thanks to the United States Geological Survey**

<b>Date of Obs</b>	<b>River Gage ID</b>	<b>Snow on Ice</b>	<b>Avg Ice Thickness</b>	<b>Flow (CFS)</b>
2/11	<a href="#">DOVM1</a>	4 inches	12 inches	109
2/11	<a href="#">MATM1</a>	3 inches	12.6 inches	347
2/11	<a href="#">BSTM1</a>	1 inch	7 inches	6
2/11	<a href="#">MFDM1</a>	2 inches	12 inches	540
2/14	<a href="#">MXKM1</a>	6 inches	12 inches	20
2/14	<a href="#">KENM1</a>	6 inches	12 inches	33.8

**Groundwater** continued to struggle given the deep frozen grounds and what was a flash drought in the fall and early winter of 2024. **Frost Depths** across the area ranged from 15-25 inches deep Downeast, 15-30 inches for the Central Highlands and 20-35 inches in Northern Maine. The frost depth reached 32 inches at WFO Caribou which is the deepest it has been in 5+ years and maxed out the equipment. Groundwater was generally below normal for all sites except near normal to normal conditions from Clayton Lake in the North Woods to St. John Valley which is consistent with the ongoing drought conditions. Groundwater graphics for the observation sites in Eastern & Northern Maine are below...

**Temperatures** ranged from 1 to 3 degrees (F) below the 1991-2020 normals, except near normal across portions of Northern Maine. Temperatures were consistently at or below normal for the first three weeks of the month across the region. In Caribou, the mercury did not rise above freezing for the first 22 days of the month. This capped a stretch of 35 consecutive days with high temperatures at or below freezing in Caribou. This was the 15th longest streak on record and the longest since 2015. Records in Caribou date back to 1939. A brief warmup occurred thereafter, with Caribou reaching its monthly high of 45°F on the 25th. The cold allowed for significant ice buildup on area rivers and lakes. Also, frost depth in Caribou reached 32 inches late in the month. This was the largest frost depth recorded in at least the last five years. Temperatures were 3.3°F below normal at Bangor, making it the coldest February there since 2015. All four major climate sites finished below normal for the first month since November 2023.

<b>Town/City</b>	<b>Avg Monthly Temperature (°F)</b>	<b>Normal Monthly Temperature (°F)</b>	<b>Departure from Normal (°F)</b>
<b>Frenchville</b>	12.2	14.0	<b>-1.8</b>
<b>Fort Kent</b>	9.9	10.0	<b>-0.1</b>
<b>Van Buren</b>	8.9	8.9	<b>0.0</b>
<b>Caribou</b>	14.1	14.2	<b>-0.1</b>
<b>Houlton</b>	13.7	14.8	<b>-1.1</b>
<b>Millinocket</b>	17.0	17.6	<b>-0.6</b>
<b>Greenville*</b>	14.6	16.3	<b>-1.7</b>
<b>Moosehead</b>	11.8	14.3	<b>-2.5</b>
<b>Dover-Foxcroft</b>	15.9	16.9	<b>-1.0</b>
<b>Corinna</b>	17.3	19.3	<b>-2.0</b>
<b>Bangor</b>	17.7	21.0	<b>-3.3</b>
<b>East Surry</b>	19.8	22.2	<b>-2.4</b>
<b>Robbinston*</b>	21.0	22.1	<b>-1.1</b>
<b>Topsfield*</b>	16.5	18.8	<b>-2.3</b>

Read below for specific details & maps of Streamflows, Groundwater Levels, Non-Routine Hydrologic Products issued by WFO Caribou and Drought conditions.

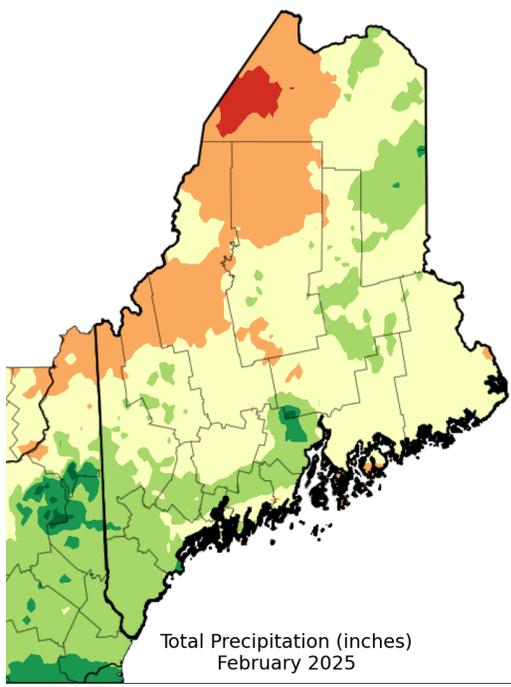


Figure 5. Total Precipitation (inches) February 2025

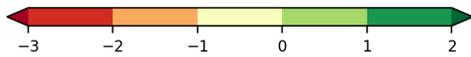
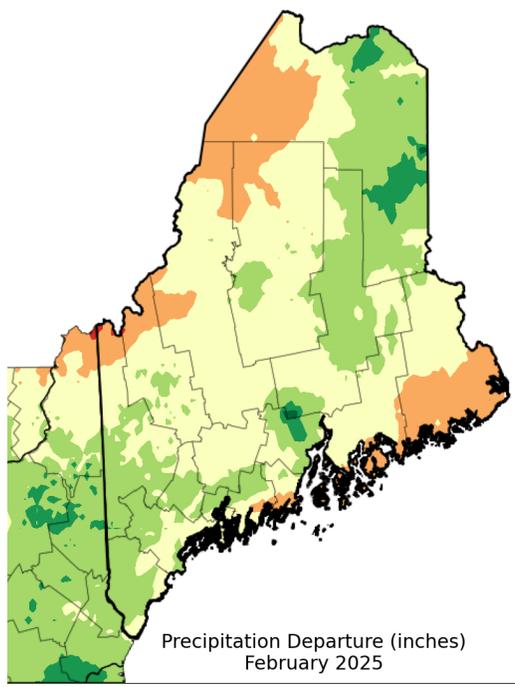


Figure 6. % of Normal Precipitation February 2025

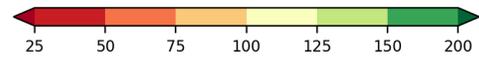
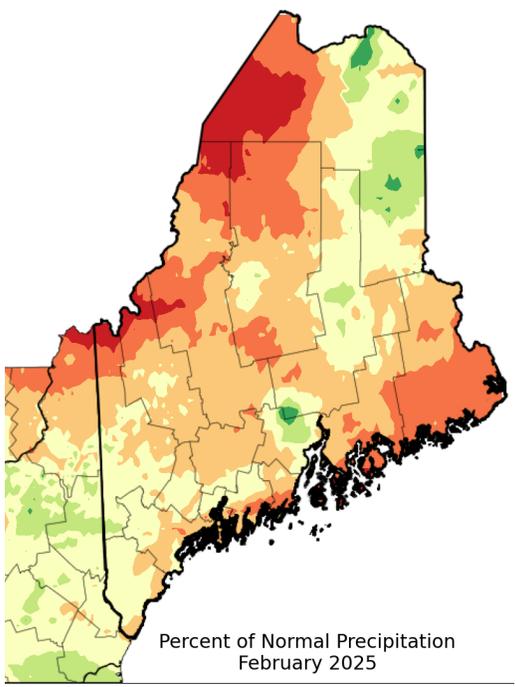


Figure 7. Precipitation Departure (inches) February 2025

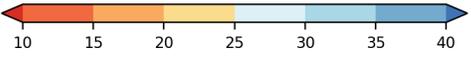
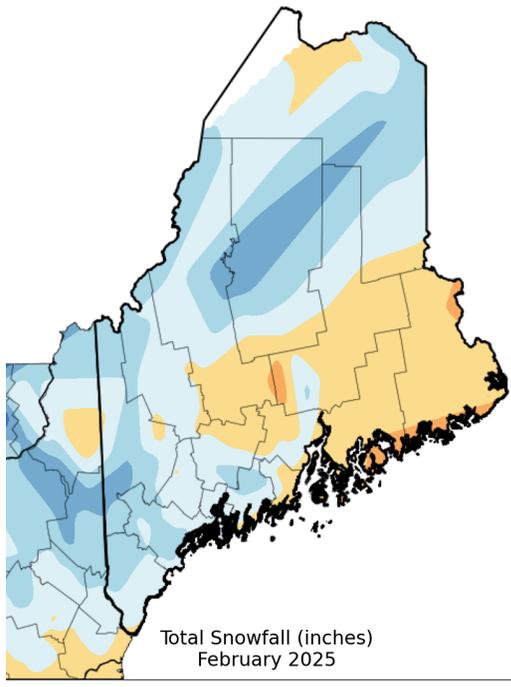


Figure 8. Total Snowfall February 2025

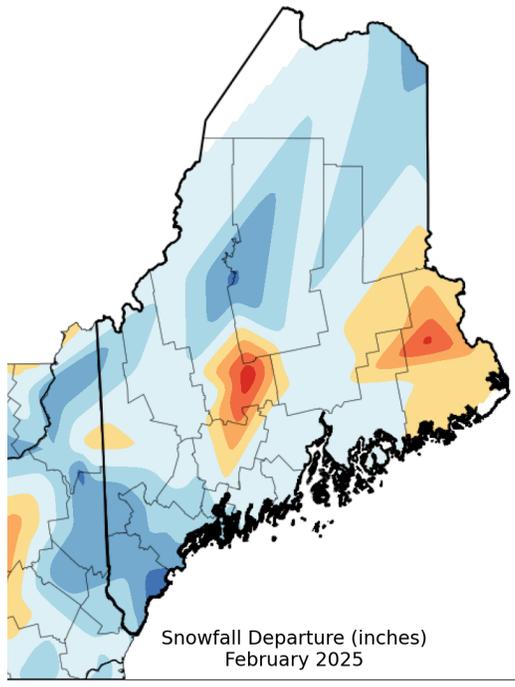


Figure 9. Snowfall Departure February 2025

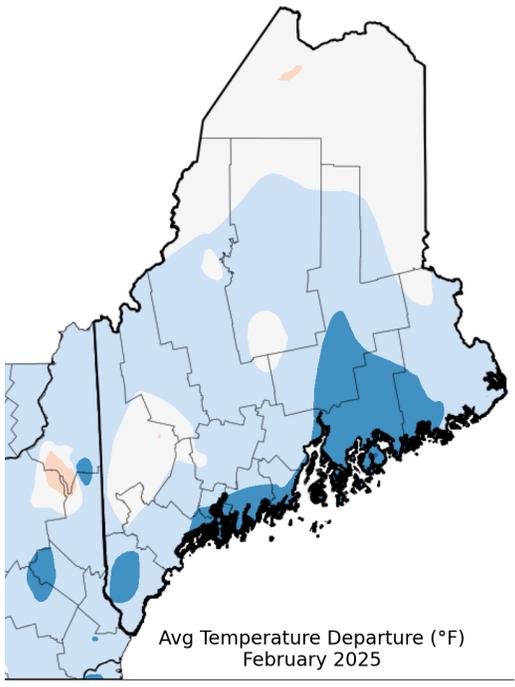


Figure 10. Avg Temperature Departure February 2025

Figure 5-10 Source: [Northeast Regional Climate Center](#)

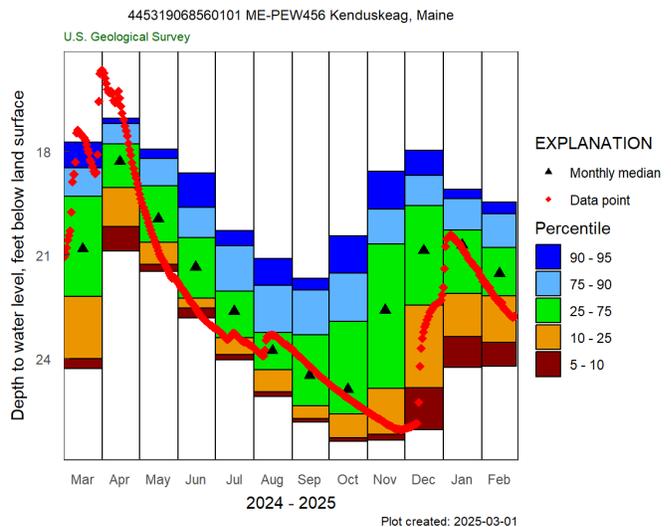
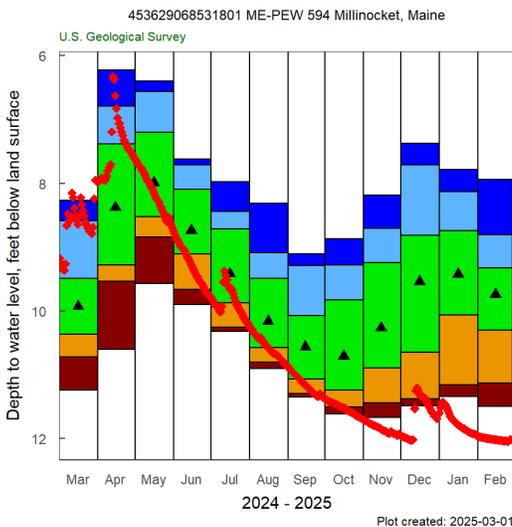
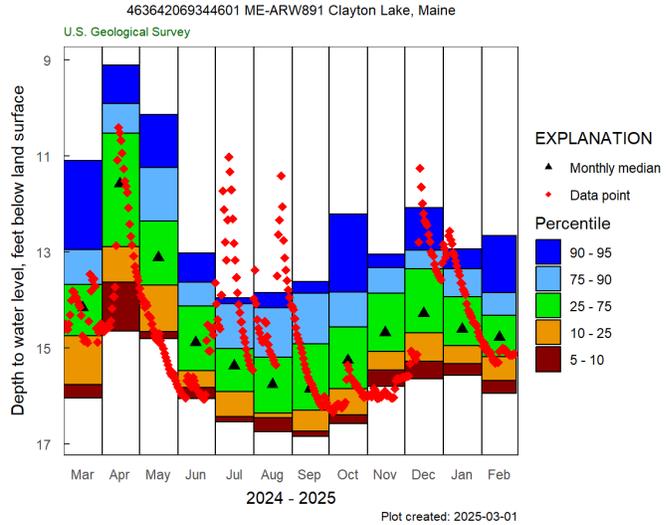
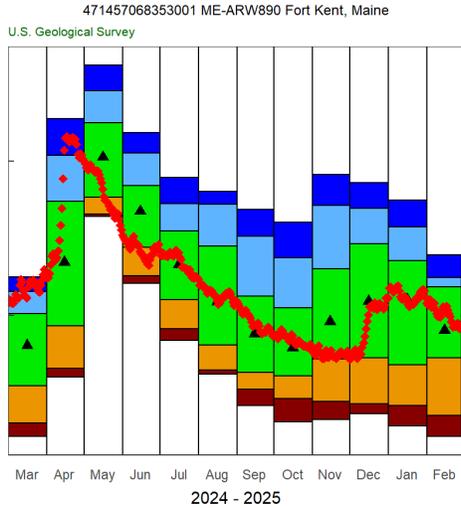
### February Average Monthly Streamflows

\*Data provided by the U.S. Geological Survey\*

River	Monthly Mean Flow (cfs)	% Normal (mean)	Percentile Class	Drainage (mi <sup>2</sup> )	Years of Record
Big Black River near Depot Mtn	NA	NA	Ice Impacted	171	40
St. John River at Nine Mile Bridge	NA	NA	Ice Impacted	1341	73
Allagash River near Allagash	NA	NA	Ice Impacted	1478	94
St. John River at Dickey	NA	NA	Ice Impacted	2680	79
St. John River at Fort Kent	NA	NA	Ice Impacted	5929	97
Fish River near Fort Kent	NA	NA	Ice Impacted	873	94
Aroostook River near Masardis	NA	NA	Ice Impacted	892	66
Aroostook River at Washburn	NA	NA	Ice Impacted	1654	93
St. Croix River at Vanceboro	406	46%	Much Below Normal	413	96
St. Croix River at Baring	NA	NA	Ice Impacted	1374	65
Grand Lake Stream at Grand Lake Stream	65	14%	Much Below Normal	228.3	95
Narraguagus River at Cherryfield	NA	NA	Ice Impacted	227	75
East Branch Penobscot River at Grindstone	NA	NA	Ice Impacted	837	102
Mattawamkeag near Mattawamkeag	NA	NA	Ice Impacted	1418	89
Piscataquis River near Dover-Foxcroft	NA	NA	Ice Impacted	298	121
Sebec River at Sebec	217	46%	Much Below Normal	326	68
Piscataquis River at Medford	NA	NA	Ice Impacted	1162	92
Penobscot River at West Enfield	NA	NA	Ice Impacted	6422	121

## February Monthly Average Groundwater Levels

Station	Percentile Class	Years of Record
Hadley Lakes	Much Below Normal	39
Kenduskeag	Below Normal	44
Calais	Below Normal	43
Millinocket	Low	30
Clayton Lake	Normal	35
Fort Kent	Normal	48



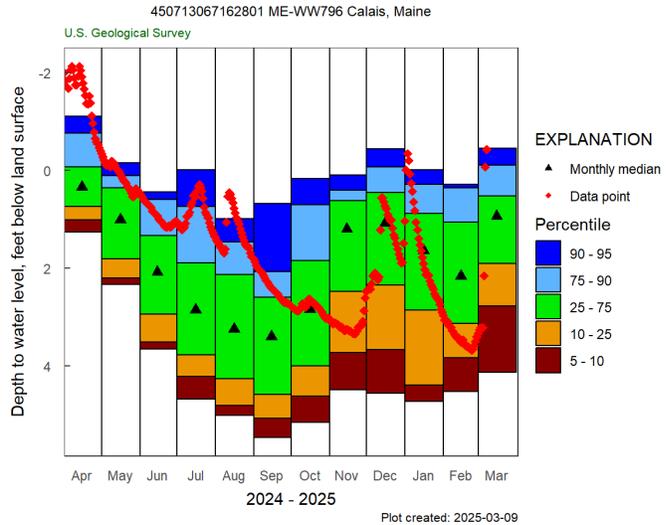
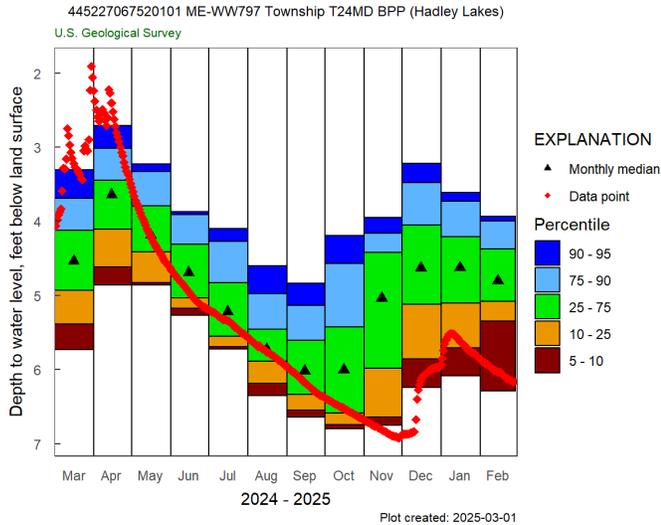


Figure 11-16: Groundwater Level Yearly Plots to Current  
Source: [United States Geological Survey](https://www.usgs.gov/)

Flow or Water Level	Percentile Range	Explanation
Ice Impacted	NA	Ice impacted resulting in No Data available
Low	0 <sup>th</sup>	The monthly mean streamflow or median water level during this month is the lowest ever recorded during the period of record for this site.
Much Below Normal	0 <sup>th</sup> to 10 <sup>th</sup>	The monthly mean streamflow or median water level during this month is less than the 10 <sup>th</sup> percentile when compared to all of the months during the period of record for this site.
Below Normal	10 <sup>th</sup> to 25 <sup>th</sup>	The monthly mean streamflow or median water level during this month is between the 10 <sup>th</sup> and 25 <sup>th</sup> percentiles when compared to all of the months during the period of record for this site.
Normal	25 <sup>th</sup> to 75 <sup>th</sup>	The monthly mean streamflow or median water level during this month is between the 25 <sup>th</sup> and 75 <sup>th</sup> percentiles when compared to all of the months during the period of record for this site.
Above Normal	75 <sup>th</sup> to 90 <sup>th</sup>	The monthly mean streamflow or median water level during this month is between the 75 <sup>th</sup> and 90 <sup>th</sup> percentiles when compared to all of the months during the period of record for this site.
Much Above Normal	90 <sup>th</sup> to 100 <sup>th</sup>	The monthly mean streamflow or median water level during this month is greater than the 90 <sup>th</sup> percentile when compared to all of the months during the period of record for this site.
High	100 <sup>th</sup>	The monthly mean streamflow or median water level during this month is the highest ever recorded during the period of record for this site.

**Non-Routine Hydrologic Products from WFO Caribou, ME  
February 2025**

<b>Product</b>	<b>How Many Issued</b>	<b>Reason for Issuance</b>
None	None	None

**CoCoRaHS Complete Precipitation Reports  
www.cocorahs.org  
February 2025**

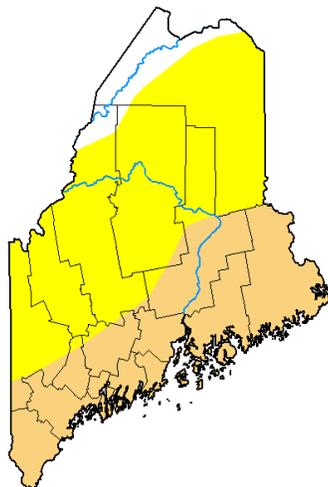
<b>Station Number</b>	<b>Station Name/Location</b>	<b>Total Precipitation (inches)</b>	<b>Total Snowfall (inches)</b>
ME-AR-15	Presque Isle 1.3 WSW	3.21	33.7
ME-AR-18	New Sweden 4.9 NNW	2.62	25.8
ME-AR-41	Castle Hill 1.0 S	2.82	35.8
ME-AR-42	Houlton 2.5 NNW	2.47	26.0
ME-HN-2	East Surry	2.91	21.0
ME-HN-4	Mariaville 1.4 ESE	2.46	22.5
ME-PN-10	Lincoln 4.3 NE	2.23	19.0
ME-PN-47	Milford 0.8 SSW	2.71	22.6
ME-PN-51	Hermon 1.2 W	2.42	33.5
ME-PN-55	Orono 1.1 SSW	2.74	25.1
ME-PN-59	Glenburn 1.5 ENE	1.81	24.2
ME-PS-9	Abbot 4.6 WNW	2.79	24.2
ME-WS-31	Eastport 1.4 ESE	3.64	24.9

**\*Additional CoCoRaHS reports were not complete with 28 days of record  
Source: <https://cocorahs.org/ViewData/TotalPrecipSummary.aspx>**

# Drought Monitor February 4, 2025

U.S. Drought Monitor  
Maine

February 4, 2025  
(Released Thursday, Feb. 6, 2025)  
Valid 7 a.m. EST



**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

**Author:**

Lindsay Johnson  
National Drought Mitigation Center

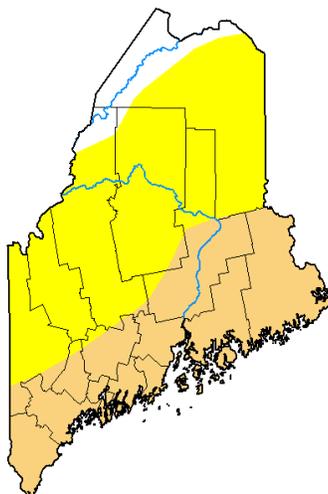


[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

# Drought Monitor February 25, 2025

U.S. Drought Monitor  
Maine

February 25, 2025  
(Released Thursday, Feb. 27, 2025)  
Valid 7 a.m. EST



**Intensity:**

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

**Author:**

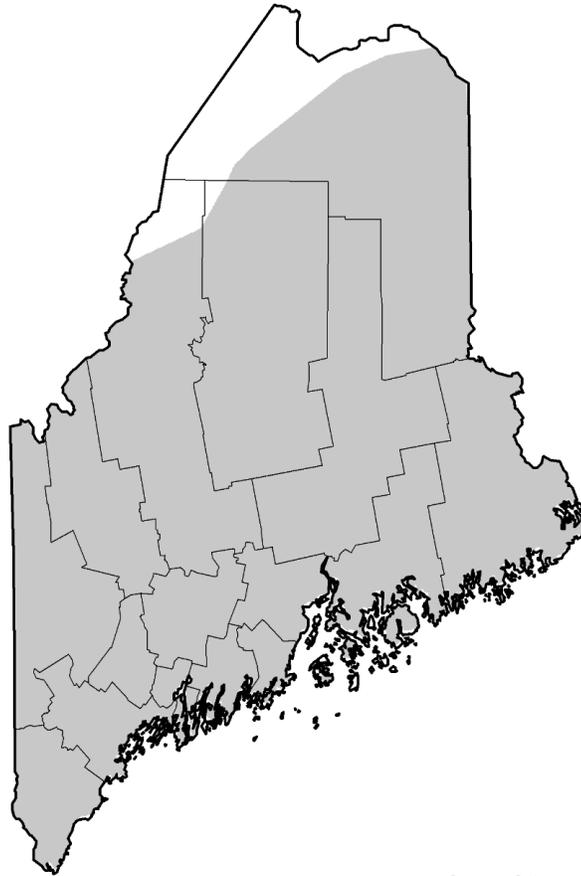
Brian Fuchs  
National Drought Mitigation Center



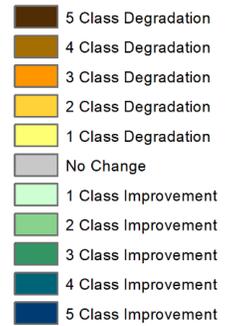
[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

## Drought Monitor Change in February 2025

### U.S. Drought Monitor Class Change - Maine 3 Week



February 25, 2025  
compared to  
February 4, 2025



[droughtmonitor.unl.edu](http://droughtmonitor.unl.edu)

Week	None (%)	D0-D4 (%)	D1-D4 (%)	D2-D4 (%)	D3-D4 (%)	D4 (%)	DSCI
2/4/2025	7.31	92.69	38.12	0.00	0	0	131
2/25/2025	7.31	92.69	38.12	0.00	0	0	131
Change	0.00	0.00	0.00	0.00	0	0	0

**River Ice Photos**

St. John River @ St. Francis "Narrow Gauge" on February 28, 2025  
Courtesy: Craig Ouellette



Aroostook River @ Fort Fairfield on February 27, 2025  
Courtesy: James Sinko NWS Caribou



Aroostook River @ Fort Fairfield (Strickland Rd & N. Caribou Rd) on February 27, 2025  
Courtesy: James Sinko NWS Caribou



Penobscot River @ Howland Dam on February 22, 2025  
Courtesy: James Sinko NWS Caribou



Kenduskeag River @ Bangor (Plaza) on February 22, 2025  
Courtesy: James Sinko NWS Caribou



Penobscot River @ Bangor (Union St Bridge) on February 22, 2025  
Courtesy: James Sinko NWS Caribou



Aroostook River @ Masardis on February 18, 2025  
Courtesy: James Sinko NWS Caribou



Aroostook River @ Ashland on February 18, 2025  
Courtesy: James Sinko NWS Caribou



St. John River @ Allagash (Dickey Bridge) on February 18, 2025  
Courtesy: James Sinko NWS Caribou



Allagash River @ St. John River Confluence on February 18, 2025  
Courtesy: James Sinko NWS Caribou



St. John River @ St. Francis on February 18, 2025  
Courtesy: James Sinko NWS Caribou



Fish River @ Fort Kent on February 18, 2025  
Courtesy: James Sinko NWS Caribou

