NWS Form E-5
(04-2006)
(PRES. BY NWS Instruction 10-924)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

HYDROLOGIC SERVICE AREA (HSA)

WFO Caribou, Maine

REPORT FOR:
MONTH YEAR

May 2025

TO: Hydrologic Information Center, W/OS31
NOAA's National Weather Service
1325 East West Highway
Silver Spring, MD 20910-3283

SIGNATURE

James Sinko - Meteorologist
Hydrology Program Manager

DATE

June 4, 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).

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

May 2025

May 2025 featured near to slightly above normal temperatures across northern and eastern Maine. Precipitation was well above normal for much of the region. ENSO-neutral conditions persisted through the month, with near-average sea surface temperatures (SSTs) observed across most of the Pacific Ocean. The North Atlantic Oscillation (NAO) monthly index was approximately +0.28 standard deviations, while the Pacific North American (PNA) pattern index averaged near -0.70 standard deviations. The large-scale atmospheric pattern over the continental United States remained highly amplified. A persistent ridge was established over the central and western U.S., with longwave troughing dominating the East. Several cutoff lows developed within this pattern, contributing to slightly negative 500mb height anomalies across the Ohio River Valley. Repeated episodes of "Omega" blocking were observed during the month, positioning Maine on the cooler and wetter side of the ridge. As a result, the region experienced another month of above-normal precipitation. Cooler temperatures and increased cloud cover also enhanced soil moisture retention across much of the area.

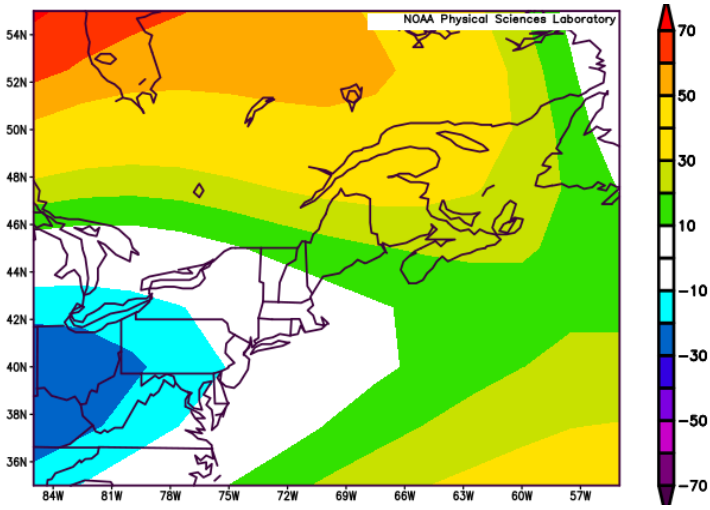


Figure 1: 500mb Geopotential Height (m) Anomalies *(1991-2020 Climo)*
May 2025

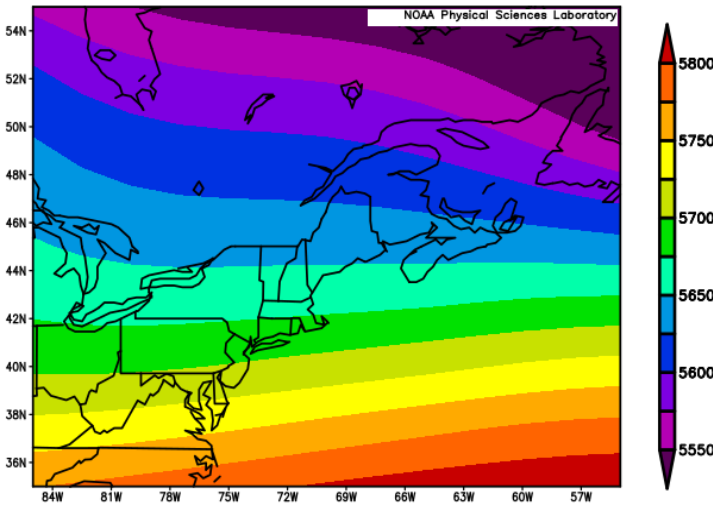


Figure 2: 500mb Geopotential Height (m) Composite Mean
May 2025

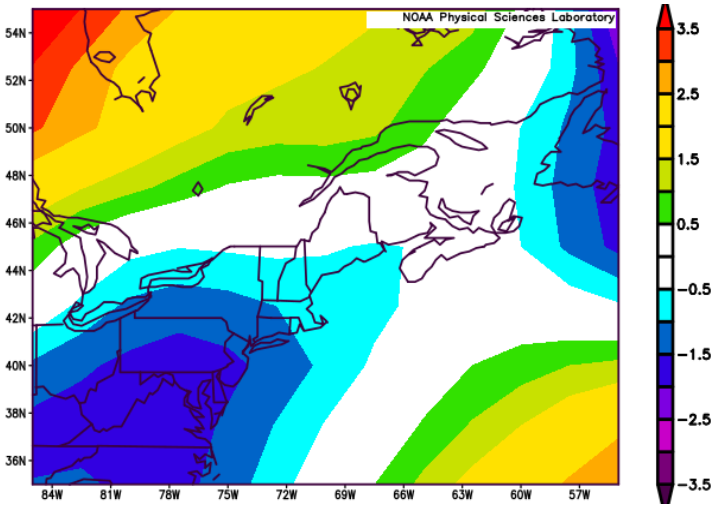


Figure 3: Sea Level Pressure (mb) Anomalies *(1991-2020 Climo)*
May 2025

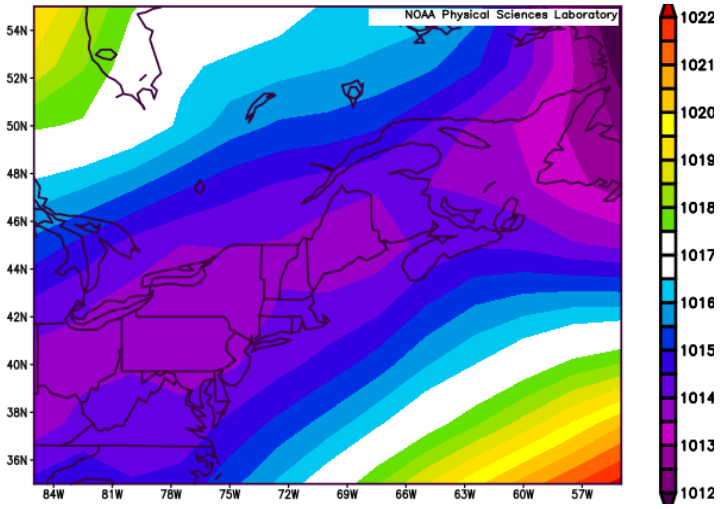


Figure 4: Sea Level Pressure (mb) Composite Mean
May 2025

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*	3.89	3.07	**0.82**	126.7%					
Fort Kent	4.02	3.31	**0.71**	121.5%	0.0	0.1	**-0.1**	0	0.0
Van Buren	3.08	3.61	**-0.53**	85.3%	0.0	0.1	**-0.1**	0	0.0
Caribou	5.04	3.46	**1.58**	145.7%	0.0	0.8	**-0.8**	0	0.0
Houlton	4.38	3.46	**0.92**	126.6%					
Millinocket*	4.49	3.42	**1.07**	131.3%	0.0			0	0.0
Greenville*	5.19	3.59	**1.60**	144.6%					
Moosehead*	4.14	3.43	**0.71**	120.7%	0.0	0.3	**-0.3**	0	0.0
Dover-Foxcroft	3.62	3.34	**0.28**	108.4%	0.0	0.1	**-0.1**	0	0.0
Corinna	3.35	3.64	**-0.29**	92.0%	0.0	0.0	0.0	0	0.0
Old Town	5.08	3.47	**1.61**	146.4%					
Bangor	5.44	3.34	**2.10**	162.9%	0.0	0.0	0.0	0	0.0
East Surry	5.09	3.71	**1.38**	137.2%	0.0			0	0.0
Robbinston*	5.82	4.35	**1.47**	133.8%	0.0	0.2	**-0.2**	0	0.0

**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.*

Total precipitation (rain and melted snow) was generally 125% to 175% of normal. In Caribou, 5.04 inches of precipitation fell during the month, making May 2025 the 10th wettest May in Caribou since records began in

1939. Total precipitation at Bangor, Millinocket, and Houlton fell short of the top 10 wettest Mays at those sites. Notably, measurable rainfall was reported every weekend in May at all four major climate sites, significantly impacting outdoor recreation during the month. No **snowfall** was reported at either Caribou or Bangor in May. No severe thunderstorm warnings were issued during the month. The highest-impact event during the month was a slow-moving nor'easter from May 23 to 25. Rainfall totals of 1 to 2.5 inches were reported from the Central Highlands southward, with lower amounts to the north. Wind gusts up to 45 mph were reported along the coast. Significant snow fell on Katahdin. Precipitation remained as rain elsewhere despite unseasonably cold temperatures. Another significant rainfall event occurred on the 31st, with 1 to 2 inches of rain across much of the region. **Evaporation** in Caribou totaled 4.30 inches for the month. Thanks to the multiple rainfall events, soil moisture was well above normal by the end of May. The U.S. **Drought Monitor** had no part of northern and eastern Maine categorized under any level of drought during the month.

Groundwater conditions in May 2025 showed notable improvement due to above-average precipitation, particularly in the northern and eastern regions. This substantial rainfall contributed to replenishing soil moisture and likely aided in groundwater recharge. Normal to above normal conditions Downeast into the Greater Bangor region. Return to normal conditions across Northern Maine and North Woods. Significant improvements noted at the Millinocket groundwater well despite it still below normal but that is thanks to the significant impacts of the 2024 Fall flash drought. For more details, refer to the graphics below.

Streamflows across the region remained sustained through May due to frequent rainfall events. Most rivers across Maine ended the month near normal flow levels. Exceptions were noted on the Fish River at Fort Kent and the St. John River at Fort Kent, both of which recorded much below normal flows (below the 10th percentile). This was primarily due to early-season peak runoff occurring earlier in the meteorological spring. Surface water availability remained steady throughout the month. Reports from Baxter State Park indicated elevated stream and river levels, with high water conditions occasionally impacting hiking trail accessibility and creating localized hazards for outdoor recreation.

Water storage across key river systems in Eastern & Northern Maine generally remained within or near normal ranges through May. The Penobscot River system began the month at 88.3% of capacity, or 0.4% below the long-term average. By the end of May, storage increased to 91.6%, remaining slightly below the long-term average by 1.4%. Ripogenus Dam storage started the month near 34.5 billion cubic feet, consistent with the normal range for May, and ended the month near 36 billion cubic feet—also within the normal range. The Union River system started the month at 90.9% of capacity, 3.5% below the long-term average. By month's end, storage declined to 86.7%, or 13.3% below average. Please note: water release schedules are subject to change based on evolving weather conditions and power system operational needs, and may not be reflected in monthly storage statistics.

Temperatures across the region ranged from normal to 1.5°F above the 1991–2020 averages. In Caribou, the average temperature of 52.2°F exactly matched the 1991–2020 average for May. No major climate site finished in the top 10 warmest for the month of May. Positive departures for the month were mostly driven by warmer-than-average minimum temperatures. In Millinocket, the average minimum temperature was 45.4°F—3.6 degrees above average and the 7th warmest since records began in 1903. Elsewhere, average minimum temperatures for May were 0.5 to 2.5 degrees above normal. Average maximum temperatures for May were 0.5 to 2.0 degrees below normal. No major climate site finished in the top 10 for coldest average maximum temperatures.

Bangor failed to record a freeze during the month of May for the first time since 2017. The average date of the last freeze in Bangor is May 10. Millinocket and Caribou saw a freeze on May 1, and Houlton experienced a freeze on May 22. The warmest high temperatures of the month in the north occurred on the 14th, when most northern

locations reached the 80s. Caribou set a new daily record high temperature of 86°F. The Bangor region and Downeast Maine saw their warmest temperatures on the 28th. The coldest high temperatures occurred on the 23rd during a nor'easter; that day, Caribou set a new daily record for lowest maximum temperature at 45°F.

Town/City	Avg Monthly Temperature (°F)	Normal Monthly Temperature (°F)	Departure from Normal (°F)
Frenchville	51.8	51.7	**0.1**
Fort Kent	49.0	49.4	**-0.4**
Van Buren	50.0	50.4	**-0.4**
Caribou	52.2	52.2	**0.0**
Houlton	52.1	51.2	**0.9**
Millinocket	54.7	53.2	**1.5**
Greenville*	52.3	51.4	**0.9**
Moosehead	51.7	50.8	**0.9**
Dover-Foxcroft	54.3	52.4	**1.9**
Corinna	54.8	54.7	**0.1**
Old Town	53.9	52.6	**1.3**
Bangor	54.9	54.5	**0.4**
East Surry	52.7	52.5	**0.2**
Robbinston*	52.2	51.7	**0.5**
Topsfield*	53.5	52.9	**0.6**

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

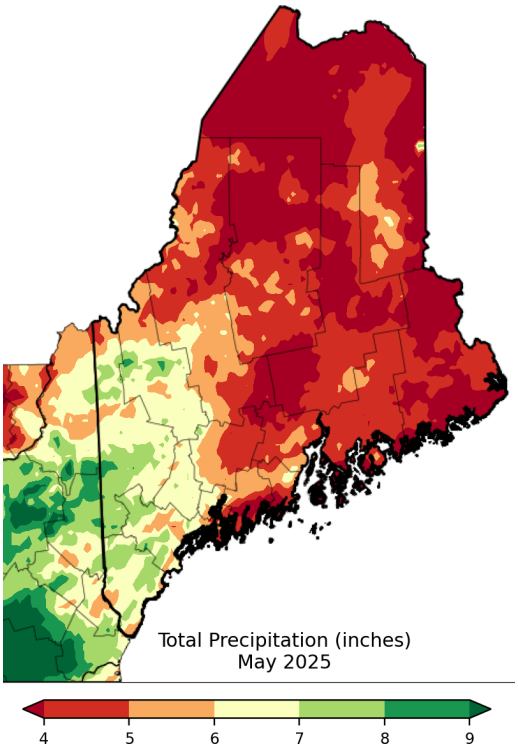


Figure 5. Total Precipitation (inches) May 2025

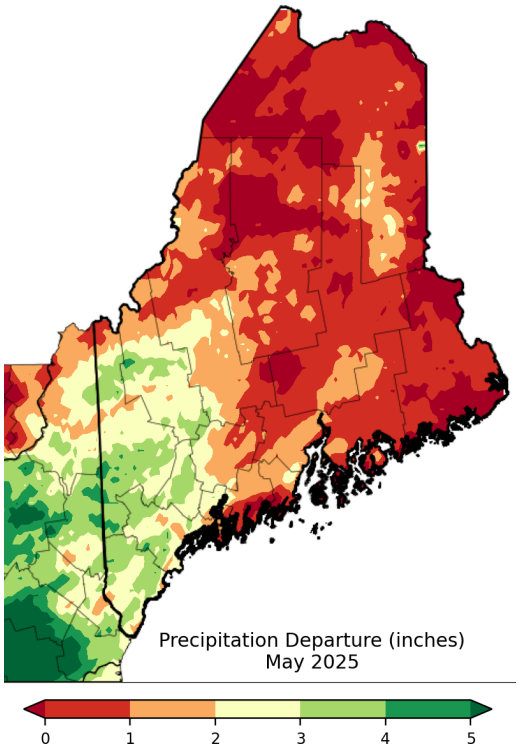


Figure 6. % of Normal Precipitation May 2025

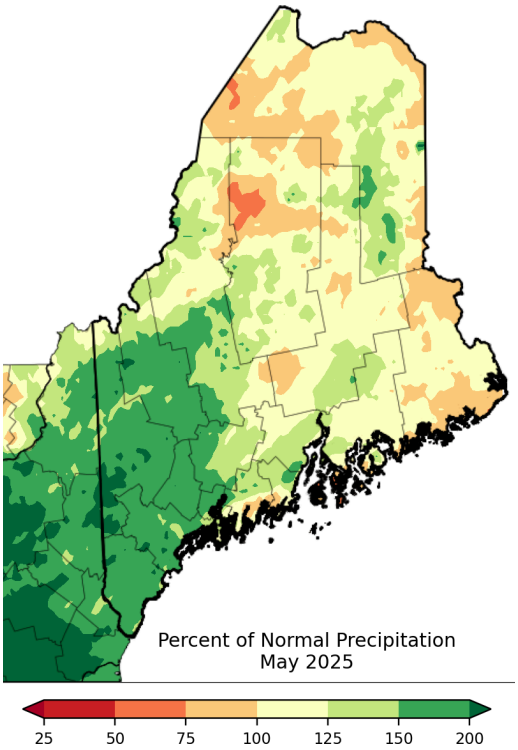


Figure 7. Precipitation Departure (inches) May 2025

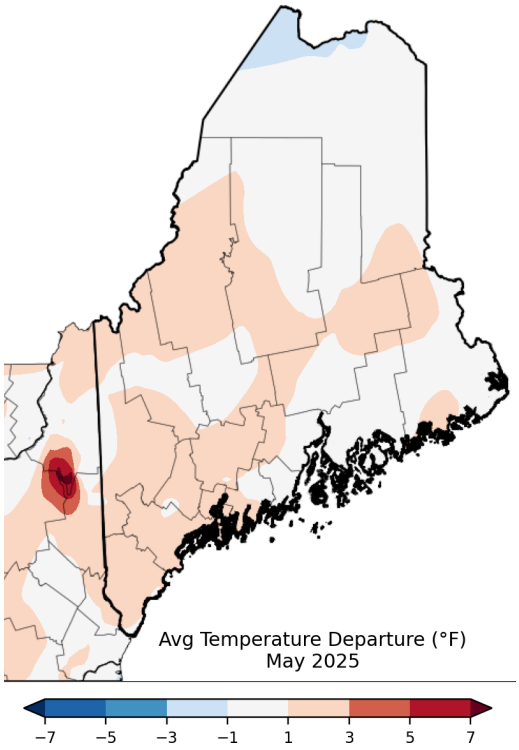


Figure 8. Avg Temperature Departure May 2025

Figure 5-8 Source: Northeast Regional Climate Center

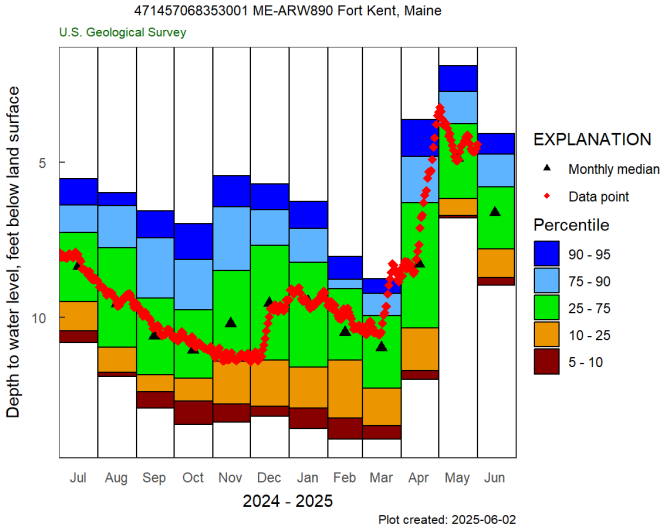
May Average Monthly Streamflows

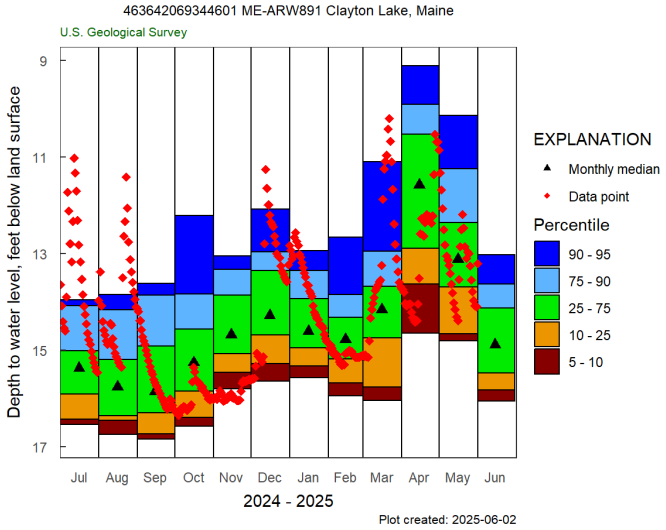
Data provided by the U.S. Geological Survey

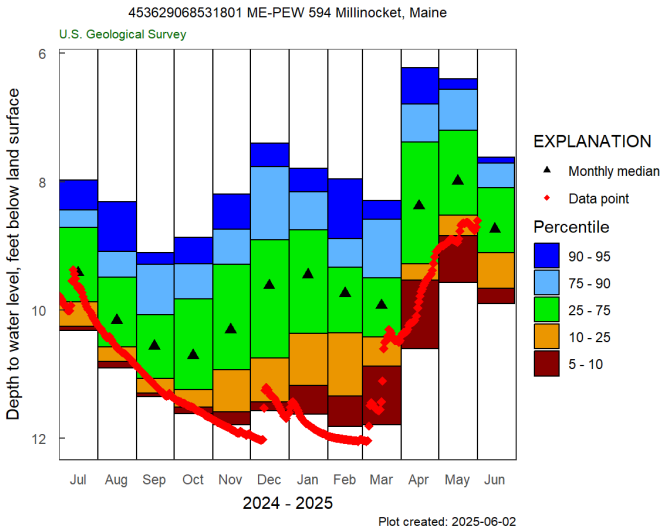
River	Monthly Mean Flow (cfs)	% Normal (mean)	Percentile Class	Drainage (mi^2)	Years of Record
Big Black River near Depot Mtn	561	75%	Normal	171	40
St. John River at Nine Mile Bridge	4793	72%	Normal	1341	73
Allagash River near Allagash	4139	68%	Normal	1478	93
St. John River at Dickey	9676	67%	Normal	2680	78
St. John River at Fort Kent	11385	36%	Much Below Normal	5929	97
Fish River near Fort Kent	2002	41%	Much Below Normal	873	94
Aroostook River near Masardis	2879	72%	Normal	892	66
Aroostook River at Washburn	5451	74%	Normal	1654	93
St. Croix River at Vanceboro	658	65%	Normal	413	95
St. Croix River at Baring	2108	58%	Below Normal	1374	64
Grand Lake Stream at Grand Lake Stream	340	79%	Normal	228.3	95
Narraguagus River at Cherryfield	669	101%	Normal	227	76
East Branch Penobscot River at Grindstone	3613	76%	Normal	837	102
Mattawamkeag near Mattawamkeag	4760	90%	Normal	1418	89
Piscataquis River near Dover-Foxcroft	1061	89%	Normal	298	121
Sebec River at Sebec	900	74%	Normal	326	69
Piscataquis River at Medford	3480	78%	Normal	1162	92
Penobscot River at West Enfield	18748	81%	Normal	6422	121

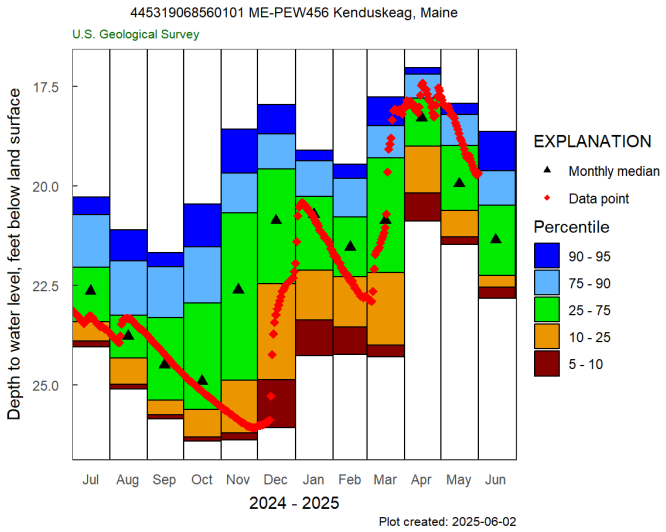
May Monthly Average Groundwater Levels

Station	Percentile Class	Years of Record
Hadley Lakes	Normal	40
Kenduskeag	Above Normal	47
Calais	Much Above Normal	45
Millinocket	Below Normal	32
Clayton Lake	Normal	47
Fort Kent	Normal	49









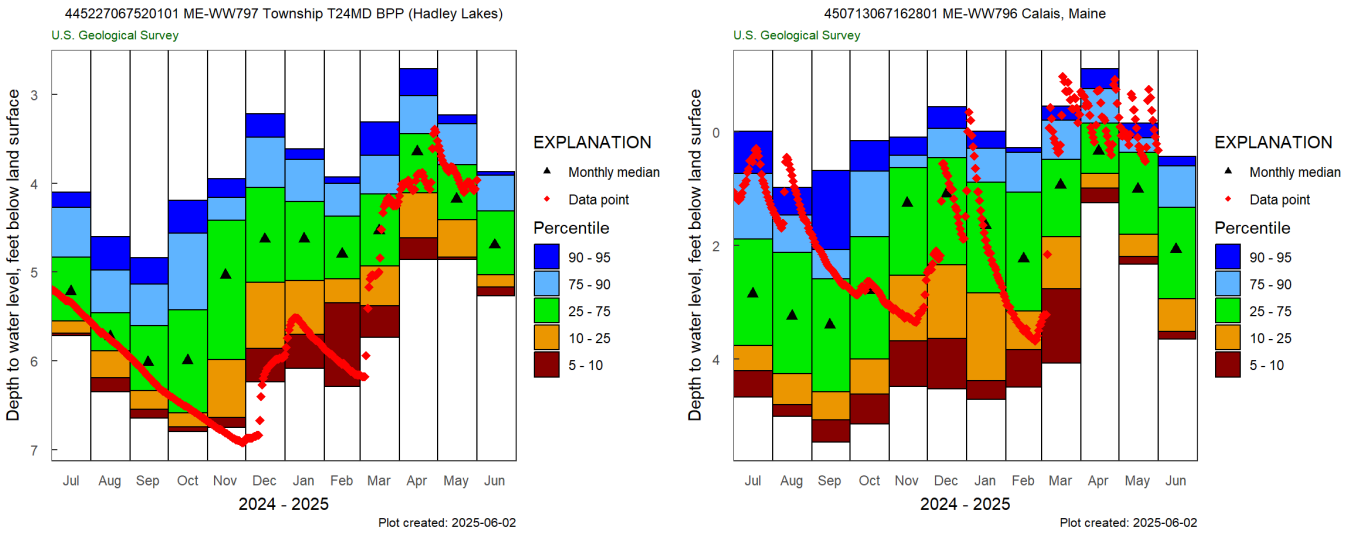
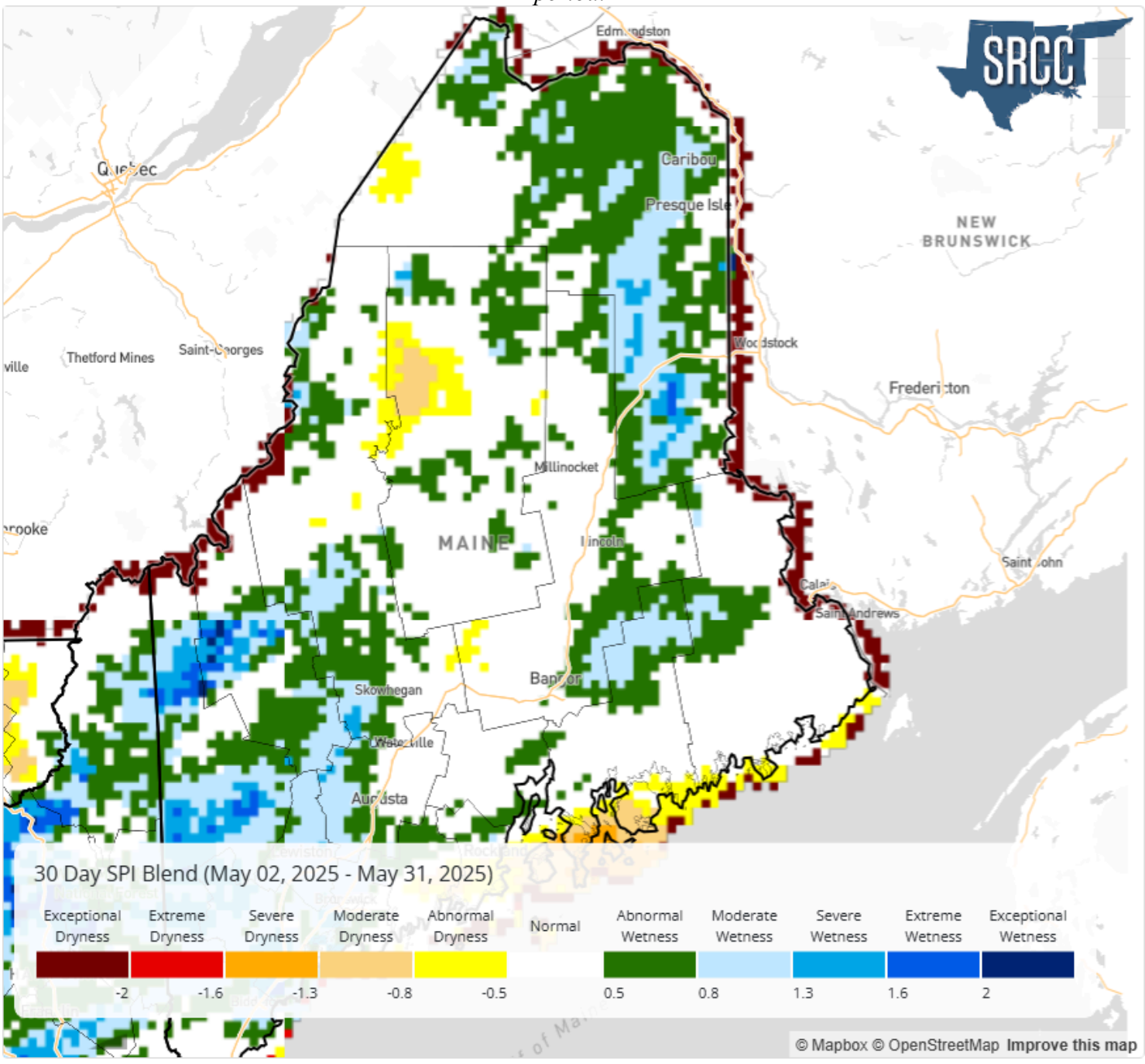


Figure 9-14: Groundwater Level Yearly Plots to Current
Source: United States Geological Survey

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

30 Day SPI Blend *(May 2-31, 2025)*

The SPI Blend is a modified version of the Standardized Precipitation Index (SPI) that is used to assess drought conditions by considering precipitation data on multiple time scales. It uses a linear weighting system, giving more weight to recent precipitation within a given time period. This approach allows for a more nuanced understanding of drought conditions compared to the traditional SPI, which considers all precipitation equally within a time period.



Non-Routine Hydrologic Products from WFO Caribou, ME
May 2025

Product	How Many Issued	Reason for Issuance
Flash Flood Warning	2	Excessive Rainfall - Convection
Flood Advisory	5	Excessive Rainfall

CoCoRaHS Complete Precipitation Reports
www.cocorahs.org
May 2025

Station Number	Station Name/Location	Total Precipitation (inches)
ME-AR-15	Presque Isle 1.3 WSW	3.21
ME-AR-18	New Sweden 4.9 NNW	4.14
ME-AR-28	Presque Isle 4.2 S	3.65
ME-AR-40	Houlton 2.2 SW	4.32
ME-AR-41	Castle Hill 1.0 S	4.00
ME-AR-42	Houlton 2.5 NNW	4.19
ME-HN-2	East Surry	4.59
ME-HN-4	Mariaville 1.4 ESE	3.96
ME-HN-42	Bucksport 3.3 NNW	5.50
ME-HN-56	Surry 2.5 SSE	5.03
ME-HN-58	Sullivan 2.4 SSE	4.33
ME-PN-10	Lincoln 4.3 NE	3.95
ME-PN-47	Milford 0.8 SSW	3.98
ME-PN-51	Hermon 1.2 W	4.05
ME-PN-55	Orono 1.1 SSW	4.88
ME-PN-58	Hudson 2.4 ESE	3.80
ME-PN-59	Glenburn 1.5 ENE	4.18
ME-PS-9	Abbot 4.6 WNW	5.37
ME-WS-31	Eastport 1.4 ESE	4.66
ME-WS-34	Perry 3.8 NNW	6.61

***Additional CoCoRaHS reports were not complete with 31 days of record**
Source: https://cocorahs.org/ViewData/TotalPrecipSummary.aspx

Drought Monitor May 6, 2025

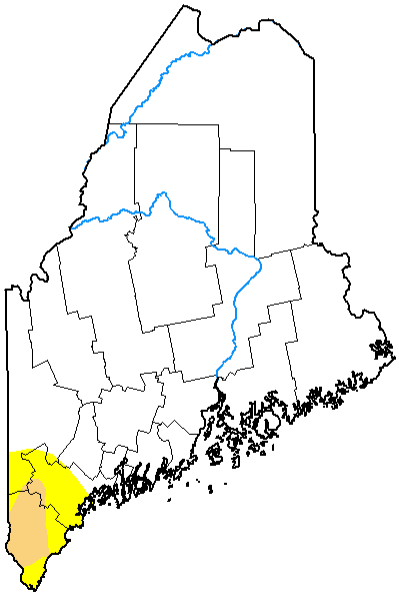
U.S. Drought Monitor

Maine

May 6, 2025

(Released Thursday, May. 8, 2025)

Valid 8 a.m. EDT



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:

Brad Pugh
CPC/NOAA

droughtmonitor.unl.edu

Drought Monitor May 27, 2025

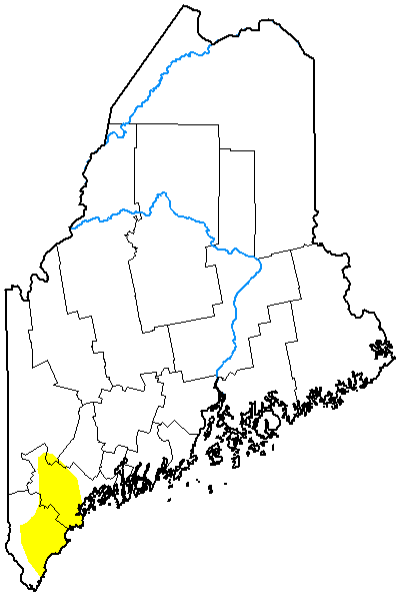
U.S. Drought Monitor

Maine

May 27, 2025

(Released Thursday, May. 29, 2025)

Valid 8 a.m. EDT



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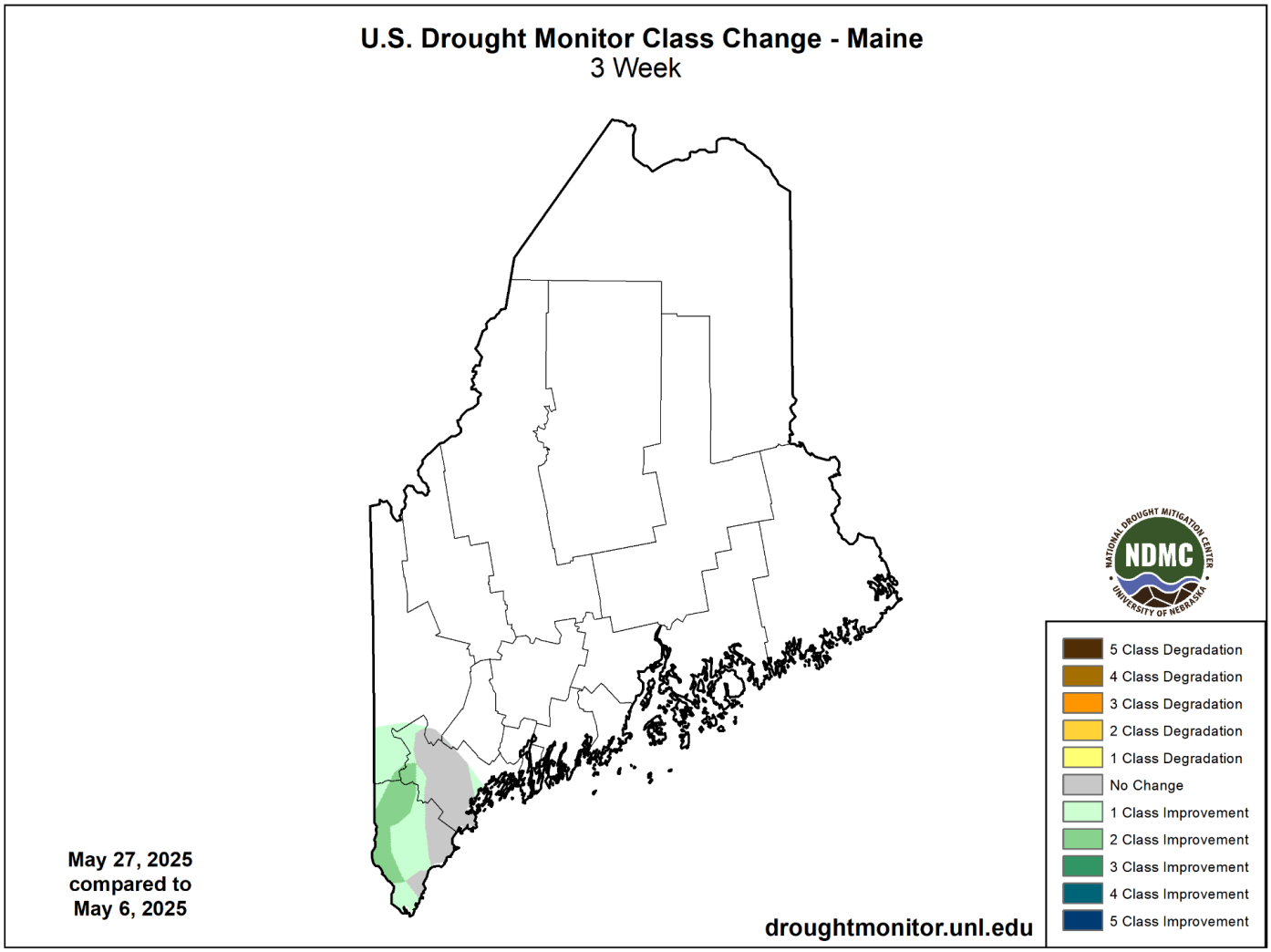
droughtmonitor.unl.edu

Drought Monitor Change in May 2025



Week	None (%)	D0-D4 (%)	D1-D4 (%)	D2-D4 (%)	D3-D4 (%)	D4 (%)	DSCI
5/6/2025	93.79	6.21	2.30	0	0	0	9
5/27/2025	96.42	3.58	0	0	0	0	4
Change	2.63	-2.63	-2.30	0	0	0	-5