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**	HYDROLOGIC SERVICE AREA (HSA) **WFO Caribou, Maine**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH: **July** YEAR: **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 **August 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).

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

July 2025

July 2025 concluded with above-average temperatures across northern and eastern Maine. Precipitation levels throughout the state varied, with conditions ranging from well below-average to slightly above-average. The overall weather was influenced by the amplified atmospheric pattern across the continental United States. The large-scale synoptic pattern was defined by an amplified jet stream. An upper-level high-pressure ridge was a dominant feature over the west-central to central portion of the country, spanning the Rockies and Plains, which promoted drier and warmer-than-average conditions there. In contrast, the eastern and east-central United States, including Maine, were influenced by an upper-level troughing pattern. This allowed for a consistent flow of moisture from the Gulf and the Atlantic Ocean. The jet stream, positioned to the north over Canada with a slight southward dip over the eastern U.S., acted as the primary steering mechanism for these weather systems into the region which targeted our northern areas with convection. From a broader climatic perspective, ENSO (El Niño–Southern Oscillation) conditions remained neutral. Monthly averages for key climate indices were near neutral, with the North Atlantic Oscillation (NAO) index at +0.19 standard deviations and the Pacific North American (PNA) pattern index at +0.14 standard deviations.

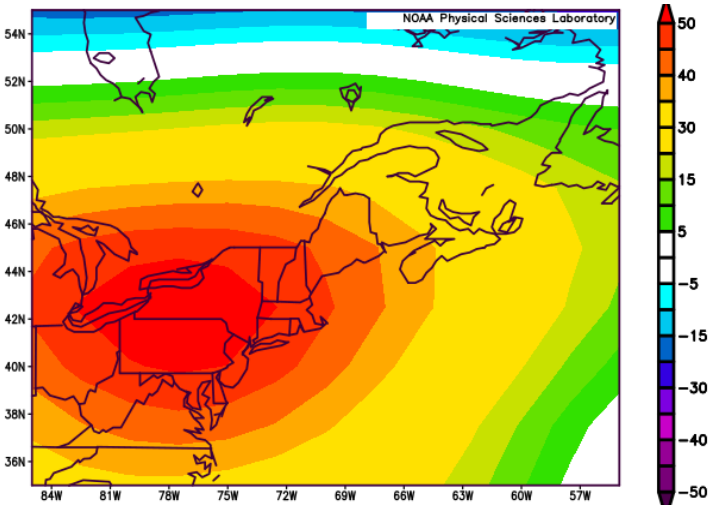


Figure 1: 500mb Geopotential Height (m) Anomalies *(1991-2020 Climo)*
July 2025

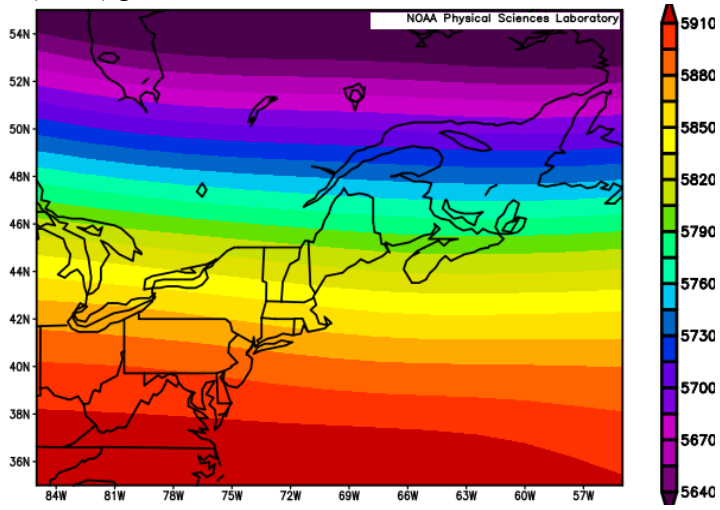


Figure 2: 500mb Geopotential Height (m) Composite Mean
July 2025

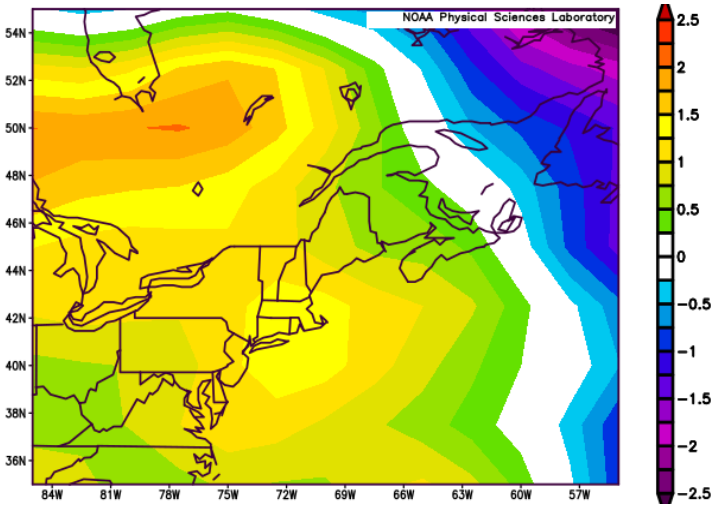


Figure 3: Sea Level Pressure (mb) Anomalies *(1991-2020 Climo)*
July 2025

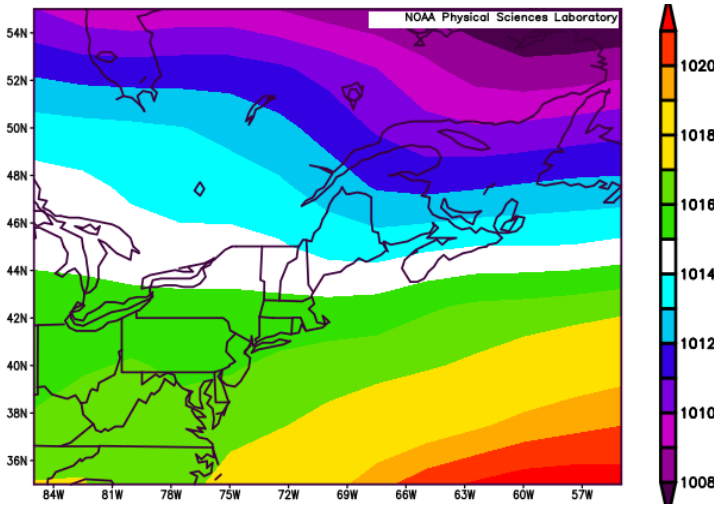


Figure 4: Sea Level Pressure (mb) Composite Mean
July 2025

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*	4.39	3.88	**0.51**	113.1%					
Fort Kent	4.25	4.52	**-0.27**	94.0%	0.0	0.0	0.0	0	0.0
Van Buren	5.07	4.81	**0.26**	105.4%	0.0	0.0	0.0	0	0.0
Caribou	4.47	4.23	**0.24**	105.7%	0.0	0.0	0.0	0	0.0
Houlton	4.00	3.63	**0.37**	110.2%					
Millinocket*	1.84	4.16	**-2.32**	44.2%	0.0			0	0.0
Greenville*	2.33	4.01	**-1.68**	58.1%					
Moosehead*	1.86	4.03	**-2.17**	46.2%	0.0	0.0	0.0	0	0.0
Dover-Foxcroft	1.62	3.36	**-1.74**	48.2%	0.0	0.0	0.0	0	0.0
Corinna	1.26	3.22	**-1.96**	39.1%	0.0	0.0	0.0	0	0.0
Old Town	1.56	3.45	**-1.89**	45.2%					
Bangor	0.81	3.16	**-2.35**	25.6%	0.0	0.0	0.0	0	0.0
East Surry	1.68	3.10	**-1.42**	54.2%	0.0			0	0.0
Robbinston*	1.62	3.18	**-1.56**	50.9%	0.0	0.0	0.0	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.*

Precipitation in July varied significantly across northern and eastern Maine. Northern regions experienced near-to-above-average rainfall, while central and southern areas were significantly drier. Northern Maine,

including locations like Caribou and Houlton, received above-average rainfall. Caribou recorded 4.47 inches, which was 0.24 inches above normal, and Houlton received 4.00 inches, 0.37 inches above normal. A number of locations across Central Highlands and Downeast Maine experienced one of their driest July months on record, a clear reflection of the significant and widespread rainfall deficits in the region. The data highlights a stark contrast between these areas and the wetter conditions observed in Northern Maine. Multiple official weather stations reported near historic lows. Bangor recorded just 0.81 inches of rain, a substantial deficit of 2.35 inches below its climatological normal for July. This precipitation total made July 2025 the 4th driest July on record for the station, with records dating back to 1926. Similarly, Millinocket received only 1.84 inches of rain, which was 2.59 inches below normal. This ranked as the 11th driest July on record for Millinocket, where records have been kept since 1903.

Cooperative weather observers also documented these dry conditions. At Dover-Foxcroft, the 1.62 inches of rainfall recorded was the 6th driest July on record since 1976. In Robbinston, July 2025 ranked as the 7th driest July since records began at that location in 1995. This trend of dryness extended to other cooperative sites, including Moosehead, Maine, where observers near the East Outlet of Moosehead Lake recorded the 7th driest July on record since 1931, and Corinna, Maine, which experienced its 4th driest July on record since 1984. These records collectively underscore the severity of the rainfall deficits and their impact on soil moisture, groundwater conditions and potential impacts to agricultural operations.

Despite significant rainfall deficits in the Central Highlands and Downeast Maine, the **U.S. Drought Monitor** showed no drought classification for northern and eastern Maine throughout July 2025. However, due to short-term precipitation deficits from both June and July 2025, conditions were becoming abnormally dry, a trend expected to continue into August. A moisture deficit was recorded at Caribou, where monthly evaporation totaled 5.77 inches while rainfall measured 4.47 inches. This resulted in a net loss of moisture from the environment. **Soil moisture** conditions varied by region. Across the northern third of the county warning area, soil moisture remained 10-20% above normal, largely due to numerous rainfall events in both June and July. In contrast, significant rainfall deficits during the same period resulted in soil moisture conditions that were 20-35% below normal, particularly along portions of the Downeast coast.

Groundwater conditions in northern and eastern Maine showed a decline throughout July 2025. While the month began with most locations having above-normal groundwater levels, consistent rainfall deficits in the Downeast and Central Highlands regions led to a notable deterioration by month's end. The lack of rainfall had a significant impact on agricultural and residential areas. Reports from Downeast Maine's blueberry fields indicated rapidly drying conditions, and lawns in the Downeast and southern Penobscot County areas were turning brown with stalled growth by late July. The low groundwater levels also affected local water resources. A news report indicated from the Stonington Water Company that the town was considering trucking in 100,000 gallons of water to address efficiency issues toward the end of the month (source). For more drought and groundwater details, refer to the graphics below.

Streamflow conditions in northern and eastern Maine in July 2025 varied significantly, largely reflecting the region's uneven precipitation. The upper stretches of the St. John River basin averaged much-above-normal flows, a direct result of above-average precipitation in both June and July. In contrast, the lower St. John River basin saw normal conditions, while the Fish River system ran below normal for the entire month.

Similarly, other basins showed a mix of conditions. The Aroostook River basin had normal to slightly above-normal flows, and the Piscataquis River and the upper Penobscot River basin were also mostly at normal levels. However, a lack of rainfall over the last one to two months caused below-normal conditions in the lower

Penobscot River basin. The Downeast river basins experienced continued well-below-normal conditions, with the St. Croix River at Baring noting a near-record low flow for July. It is important to note that the St. Croix River's flow is heavily influenced by dam operations.

Water storage across key river systems in Eastern & Northern Maine generally remained within normal ranges through July. The Penobscot River system began the month at 87.3% of capacity, or 1.8% below the long-term average which is normal. By the end of July, storage decreased slightly to 83.5%, which became slightly above the long-term average by 0.6%. Ripogenus Dam storage started the month near 34 billion cubic feet, consistent with the normal range for July, and ended the month near 32 billion cubic feet also within the normal range. The Union River system started the month at 73.6% of capacity, 9.7% below the long-term average. By month's end, storage declined to 61.8%, or 10.4% 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 in July 2025 were above average across northern and central Maine, with monthly averages ranging from 0.5 to 2.0 degrees Fahrenheit above climatological normals. Both monthly maximum and minimum temperatures were elevated. Monthly maximum temperatures were generally 1 to 2 degrees Fahrenheit above normal, with the largest deviation observed in Millinocket (+1.8°F). Caribou and Bangor also saw maximum temperatures that were approximately 1.5 degrees Fahrenheit above normal, while Houlton was 0.9 degrees above normal. Monthly minimum temperatures also contributed to the overall warmth, with deviations generally between 1.3 and 2.3 degrees Fahrenheit above normal. Millinocket and Houlton experienced the highest deviations, with minimum temperatures averaging 2.3 degrees Fahrenheit above normal. In contrast, Caribou and Bangor had slightly lower deviations, with minimum temperatures averaging 1.3 and 1.5 degrees above normal, respectively.

Town/City	Avg Monthly Temperature (°F)	Normal Monthly Temperature (°F)	Departure from Normal (°F)
Frenchville	66.6	66.1	**0.5**
Fort Kent	66.3	64.8	**1.5**
Van Buren	69.2	65.7	**3.5**
Caribou	68.1	66.7	**1.4**
Houlton	67.7	66.1	**1.6**
Millinocket	69.9	68.2	**1.7**
Greenville*	67.2	66.3	**0.9**
Moosehead	68.8	65.3	**3.5**
Dover-Foxcroft	70.1	67.4	**2.7**
Corinna	70.9	69.2	**1.7**
Old Town	69.7	67.5	**2.2**
Bangor	70.6	69.5	**1.1**
East Surry	67.5	67.4	**0.1**
Robbinston*	67.7	66.5	**1.2**
Topsfield*	69.7	67.6	**2.1**

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

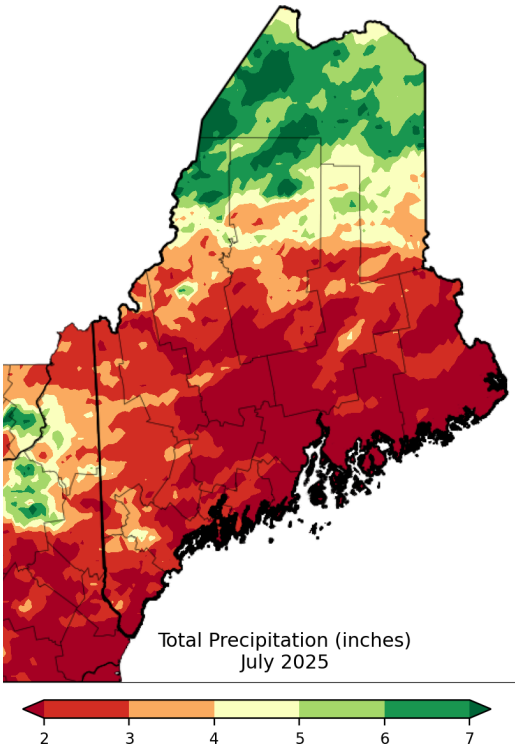


Figure 5. Total Precipitation (inches) July 2025

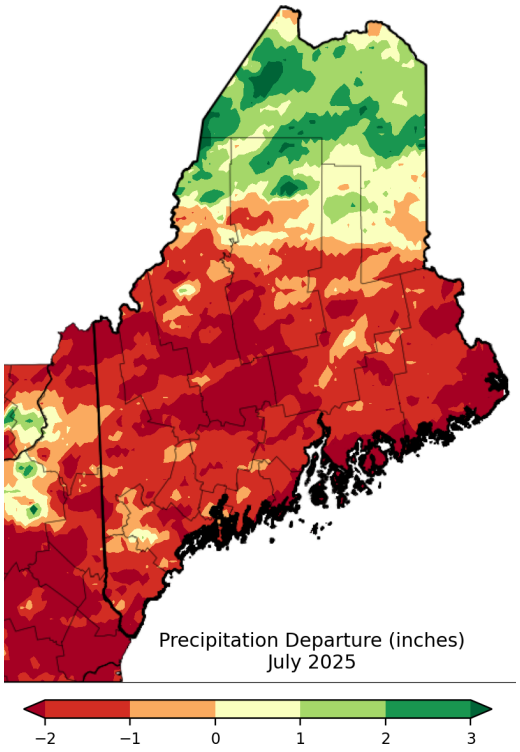


Figure 6. % of Normal Precipitation July 2025

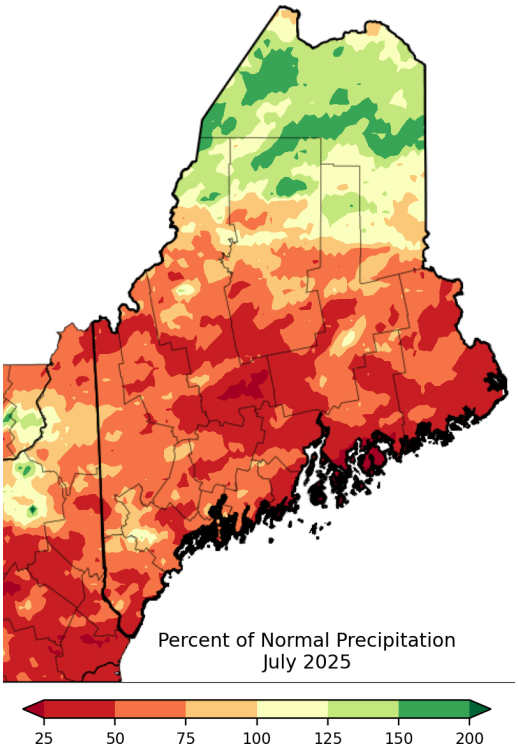


Figure 7. Precipitation Departure (inches) July 2025

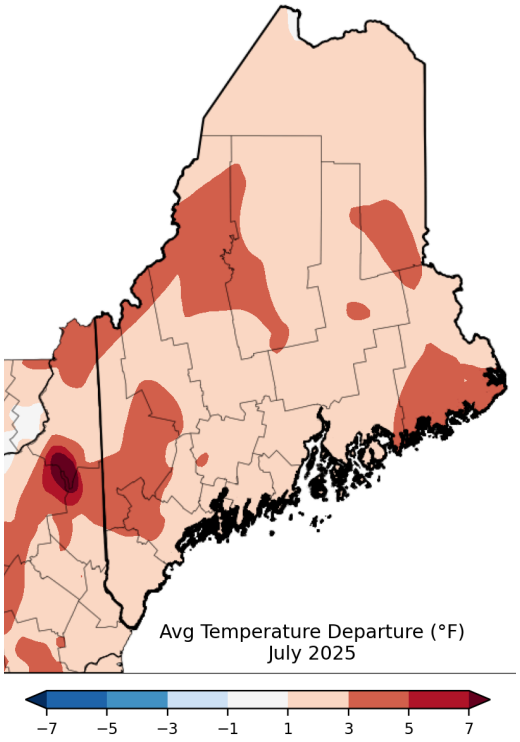


Figure 8. Avg Temperature Departure July 2025

Figure 5-8 Source: Northeast Regional Climate Center

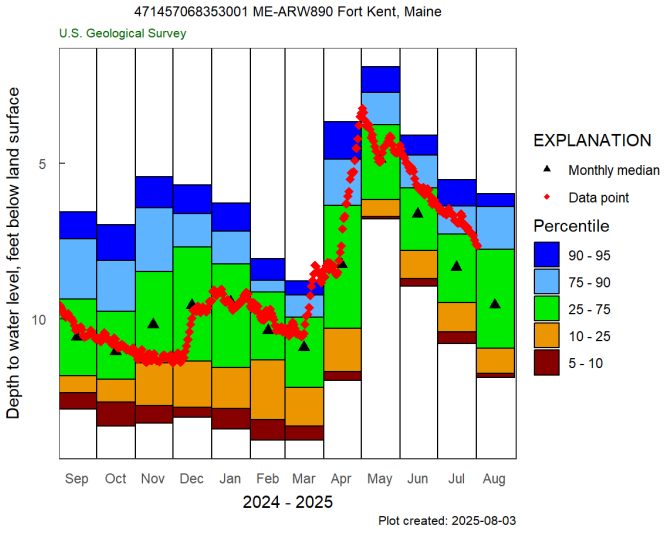
July Average Monthly Streamflows

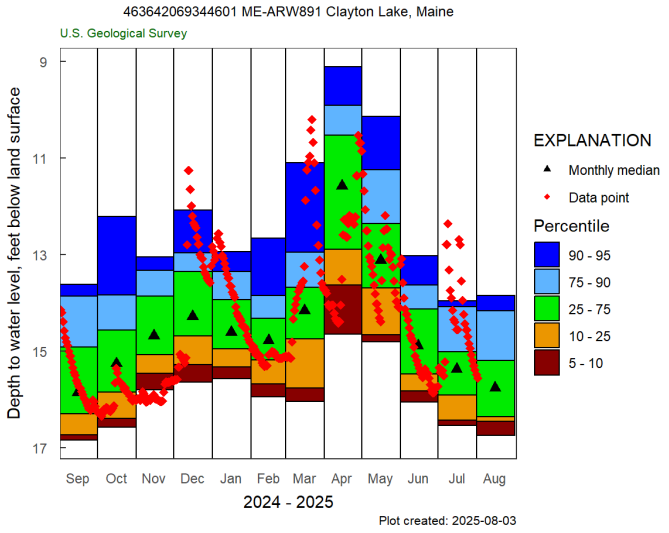
Data provided by the U.S. Geological Survey

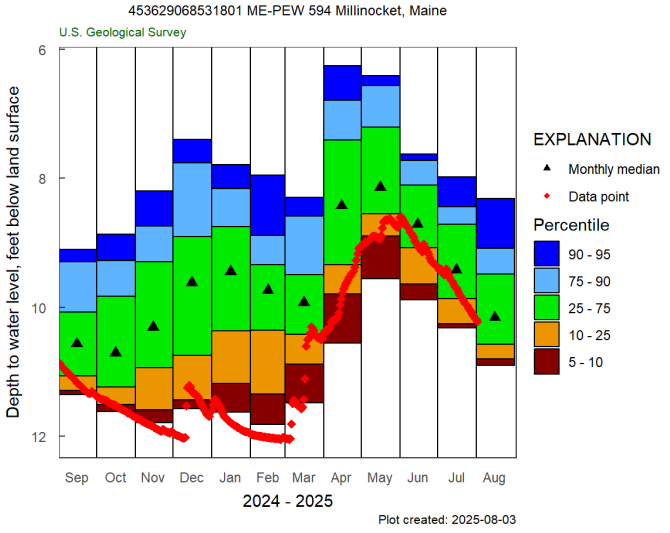
River	Monthly Mean Flow (cfs)	% Normal (mean)	Percentile Class	Drainage (mi^2)	Years of Record
Big Black River near Depot Mtn	665	340%	Much Above Normal	171	40
St. John River at Nine Mile Bridge	5302	364%	Much Above Normal	1341	73
Allagash River near Allagash	2500	179%	Much Above Normal	1478	94
St. John River at Dickey	8020	282%	Much Above Normal	2680	79
St. John River at Fort Kent	6506	102%	Normal	5929	97
Fish River near Fort Kent	575	59%	Below Normal	873	94
Aroostook River near Masardis	685	96%	Normal	892	66
Aroostook River at Washburn	1913	139%	Above Normal	1654	93
St. Croix River at Vanceboro	397	49%	Much Below Normal	413	95
St. Croix River at Baring	616	35%	Low	1374	64
Grand Lake Stream at Grand Lake Stream	147	35%	Much Below Normal	228.3	95
Narraguagus River at Cherryfield	94	47%	Below Normal	227	76
East Branch Penobscot River at Grindstone	827	62%	Normal	837	102
Mattawamkeag near Mattawamkeag	609	55%	Normal	1418	89
Piscataquis River near Dover-Foxcroft	155	61%	Normal	298	121
Sebec River at Sebec	231	71%	Normal	326	69
Piscataquis River at Medford	665	60%	Normal	1162	93
Penobscot River at West Enfield	5314	68%	Below Normal	6422	121

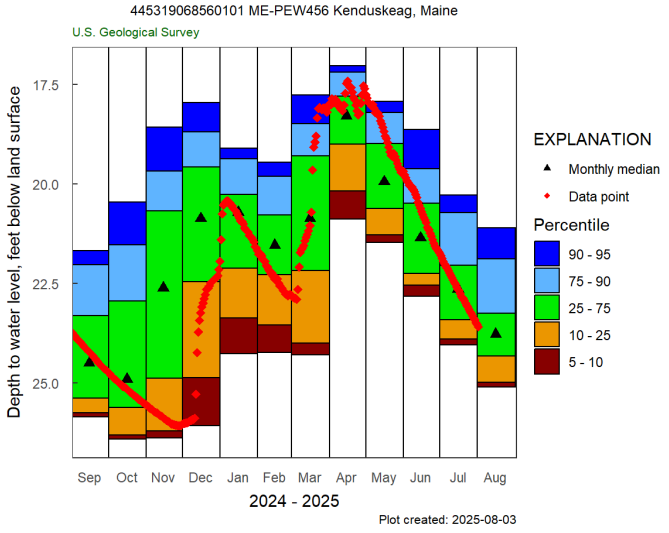
July Monthly Average Groundwater Levels

Station	Percentile Class	Monthly Mean Depth to Water Level below land surface (feet)	Years of Record
Hadley Lakes	Normal	5.02	40
Kenduskeag	Normal	22.62	47
Calais	Normal	2.56	45
Millinocket	Normal	9.72	32
Clayton Lake	Normal	14.45	47
Fort Kent	Above Normal	6.30	49









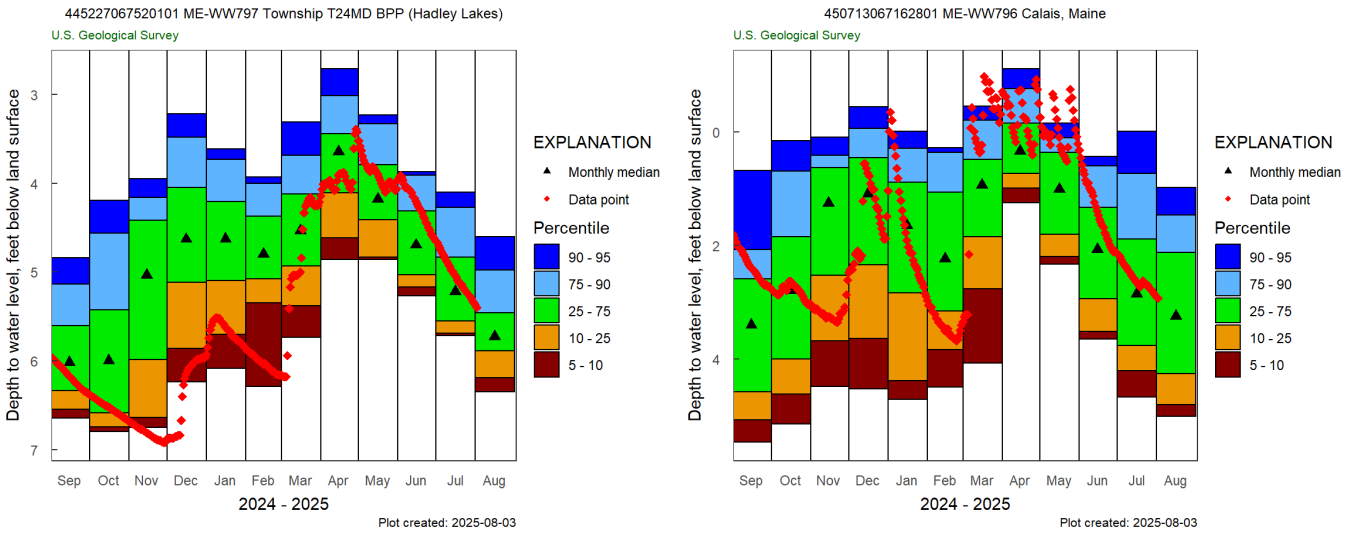
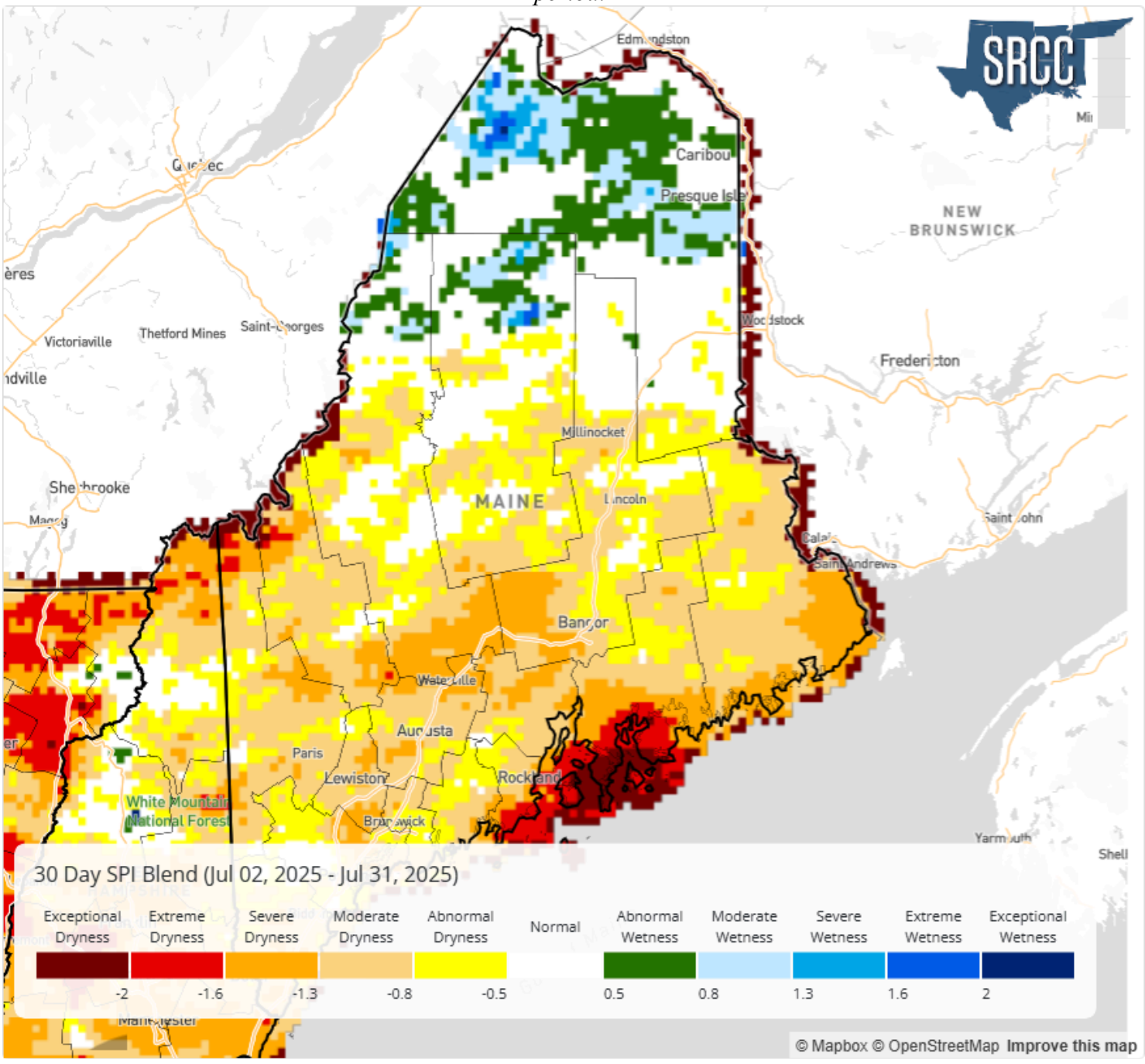


Figure 9-14: Groundwater Level Yearly Plots to Current
Source: United States Geological Survey

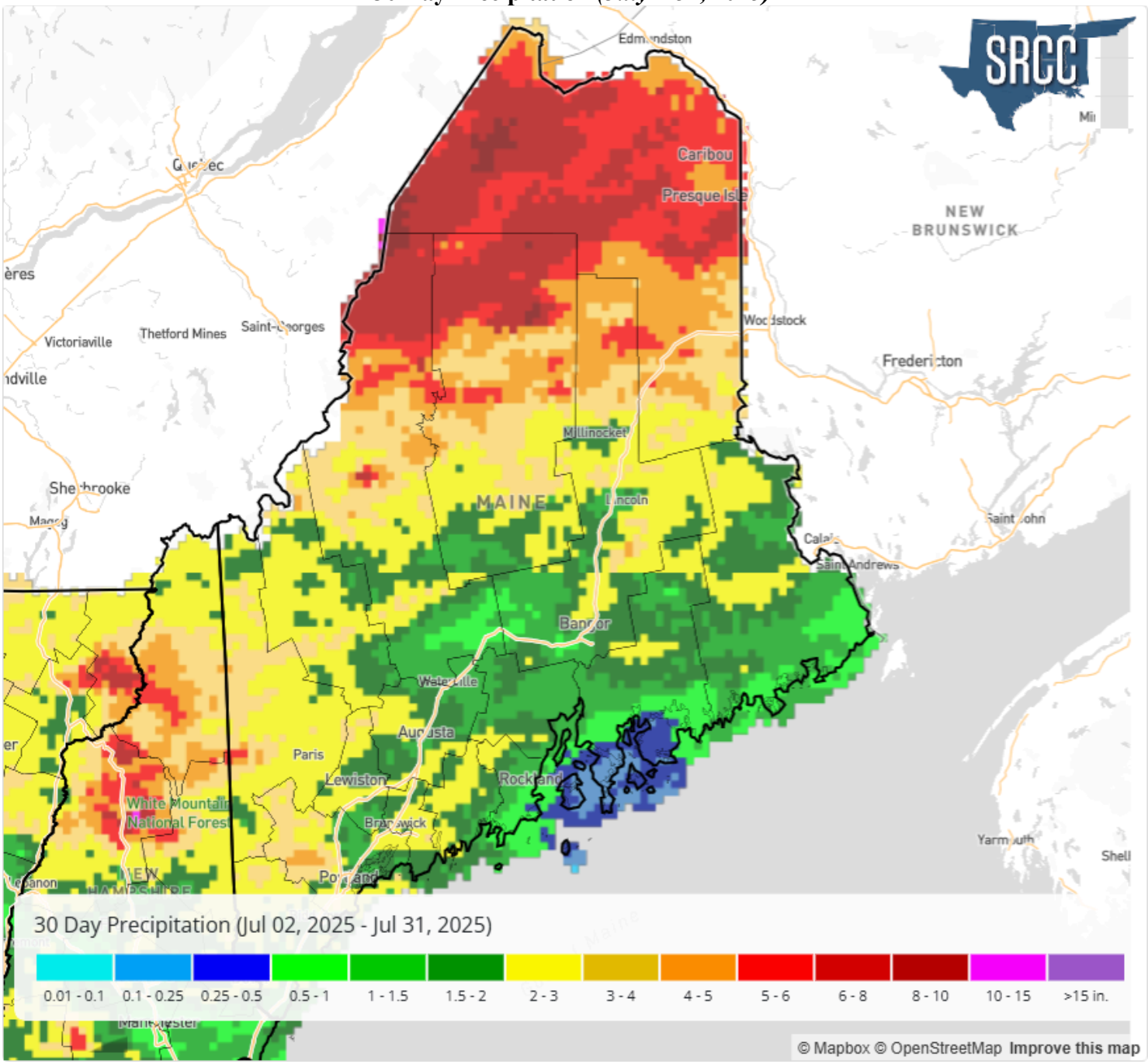
Flow or Water Level	Percentile Range	Explanation
Ice Impacted	NA	Ice impacted resulting in No Data available
Low	0^{th}	The monthly mean streamflow or median water level during this month is the lowest ever recorded during the period of record for this site.
Much Below Normal	0^{th} to 10^{th}	The monthly 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 *(July 2-31, 2025)*

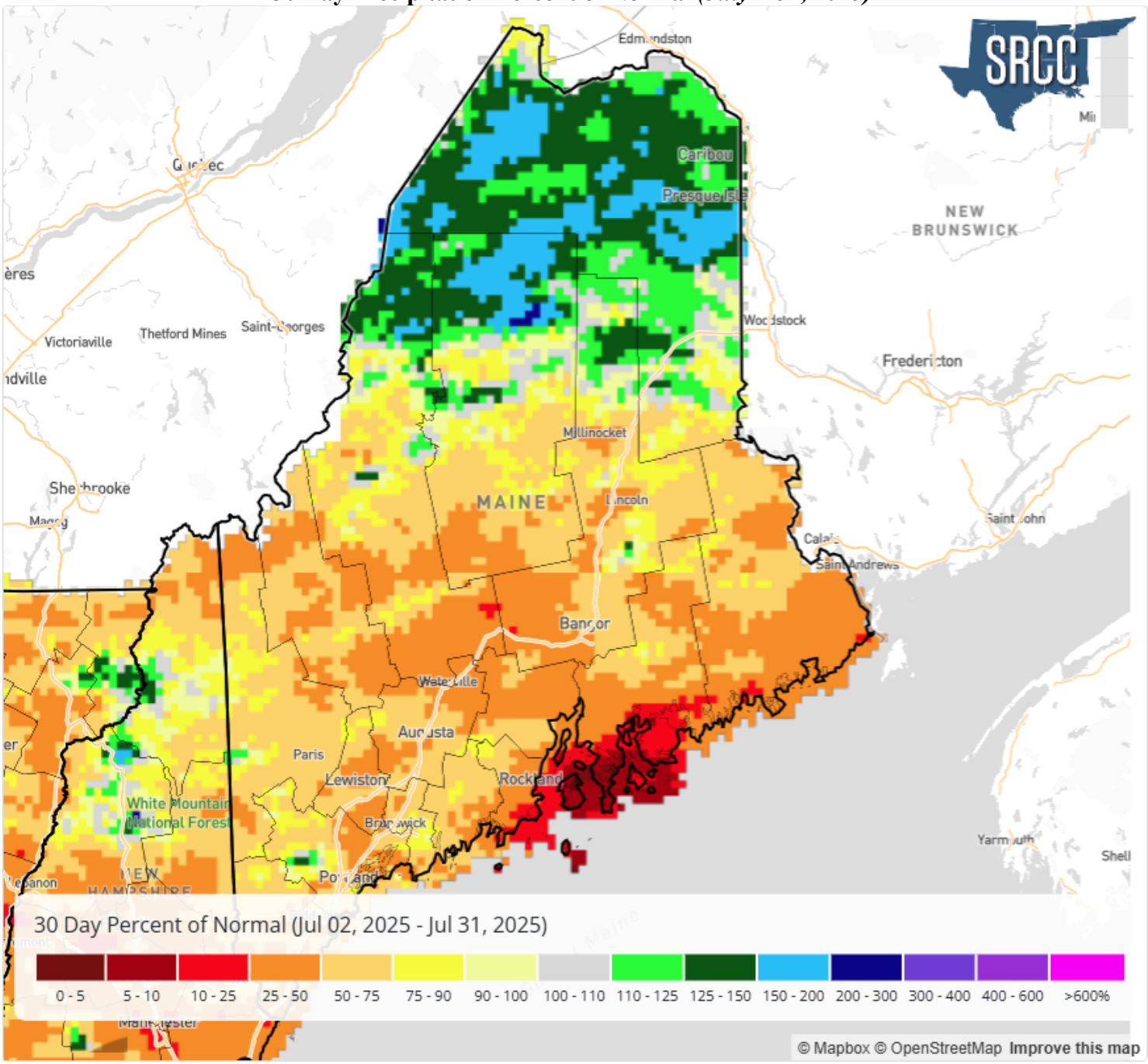
The SPI Blend is a modified version of the Standardized Precipitation Index (SPI) that is used to assess drought conditions by considering precipitation data on multiple time scales. It uses a linear weighting system, giving more weight to recent precipitation within a given time period. This approach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



30 Day Precipitation *(July 2-31, 2025)*



30 Day Precipitation Percent of Normal *(July 2-31, 2025)*



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

Product	How Many Issued	Reason for Issuance
Flood Advisory	12	Excessive Rainfall
Flash Flood Warning	3	Thunderstorms Excessive Rainfall
Flood Watch	1	Excessive Rainfall

Flash Flooding Reports
July 2025

Warning #	Location	Lead Time	Details
FF.3	10 SE Churchill Dam	37 Minutes	Telos Rd damaged and eroded with tree and other debris washed over/along the road indicative of swiftly flowing water.
FF.4	None	NA	No Reports received as of this report date
FF.5	2 NNW Baker Lake	20 Minutes	North Woods Assoc reported severe flooding damage to Baker Lake Road near mile 28. The gravel road was heavily damaged. Radar estimates of 2-2.25 inches in 1 hour.
FF.5	2 SE Baker Lake	20 Minutes	Significant washout of Baker Lake Road near Sweeney Brook. This is a dirt/gravel road. Radar estimates of 2-2.25 inches in 1 hour.
FF.5	4 NE Baker Lake	20 Minutes	A retired NHDOT employee reported significant road damage to the St. Aurelie Road near mile 25. This is a gravel/dirt road. Numerous culverts and ditches were destroyed. Radar estimates of 2-2.25 inches in 1 hour.

Additional Flooding Reports
July 2025

Time & Date	Location	County	Details
7/17/25 5:25PM	7 S Ripogenus	Piscataquis	North Woods Assoc informed us of a significant washout of gravel road at 24 mile on the Wadleigh Pond Rd near Nahmakanta Lake.

CoCoRaHS Complete Precipitation Reports
www.cocorahs.org
July 2025

Station Number	Station Name/Location	Total Precipitation (inches)
ME-AR-15	Presque Isle 1.3 WSW	5.91
ME-AR-18	New Sweden 4.9 NNW	6.46
ME-AR-28	Presque Isle 4.2 S	6.67
ME-AR-41	Castle Hill 1.0 S	6.46
ME-AR-42	Houlton 2.5 NNW	4.03
ME-HN-2	East Surry	1.64
ME-HN-4	Mariaville 1.4 ESE	2.34
ME-HN-42	Bucksport 3.3 NNW	1.58
ME-HN-56	Surry 2.5 SSE	0.94
ME-HN-58	Sullivan 2.4 SSE	0.50
ME-HN-64	Southwest Harbor 0.9 NW	1.32
ME-HN-68	Southwest Harbor 2.2 SE	1.26
ME-HN-69	Mount Desert 2.3 NE	0.84
ME-PN-10	Lincoln 4.3 NE	2.36
ME-PN-47	Milford 0.8 SSW	1.38
ME-PN-51	Hermon 1.2 W	0.84
ME-PN-54	Orono 0.6 N	1.53
ME-PN-55	Orono 1.1 SSW	1.35
ME-PN-58	Hudson 2.4 ESE	1.08
ME-PN-62	Glenburn 2.0 ESE	2.33
ME-PS-9	Abbot 4.6 WNW	1.05
ME-WS-4	Cooper 0.5 SE	1.86
ME-WS-10	Pembroke 5.4 SSE	1.05
ME-WS-11	Whiting 2.3 WSW	0.69
ME-WS-31	Eastport 1.4 ESE	1.03
ME-WS-34	Perry 3.8 NNW	1.36

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

Drought Monitor July 1, 2025

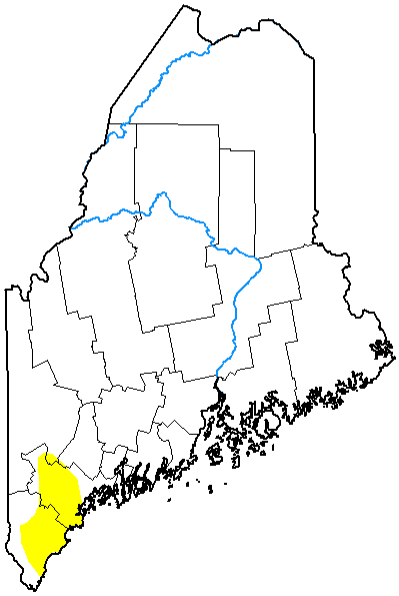
U.S. Drought Monitor

Maine

July 1, 2025

(Released Thursday, Jul. 3, 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:

Curtis Riganti
National Drought Mitigation Center

droughtmonitor.unl.edu

Drought Monitor July 29, 2025

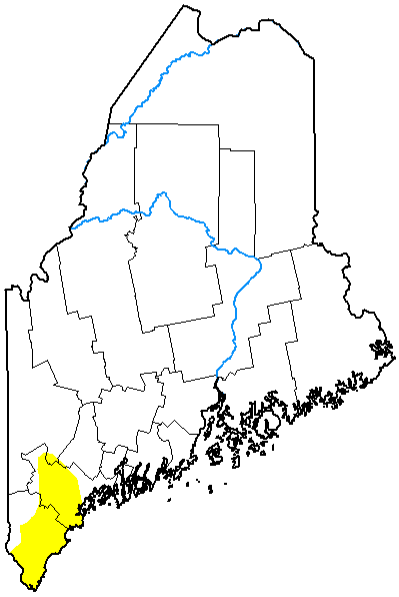
U.S. Drought Monitor

Maine

July 29, 2025

(Released Thursday, Jul. 31, 2025)

Valid 8 a.m. EDT



Intensity:

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

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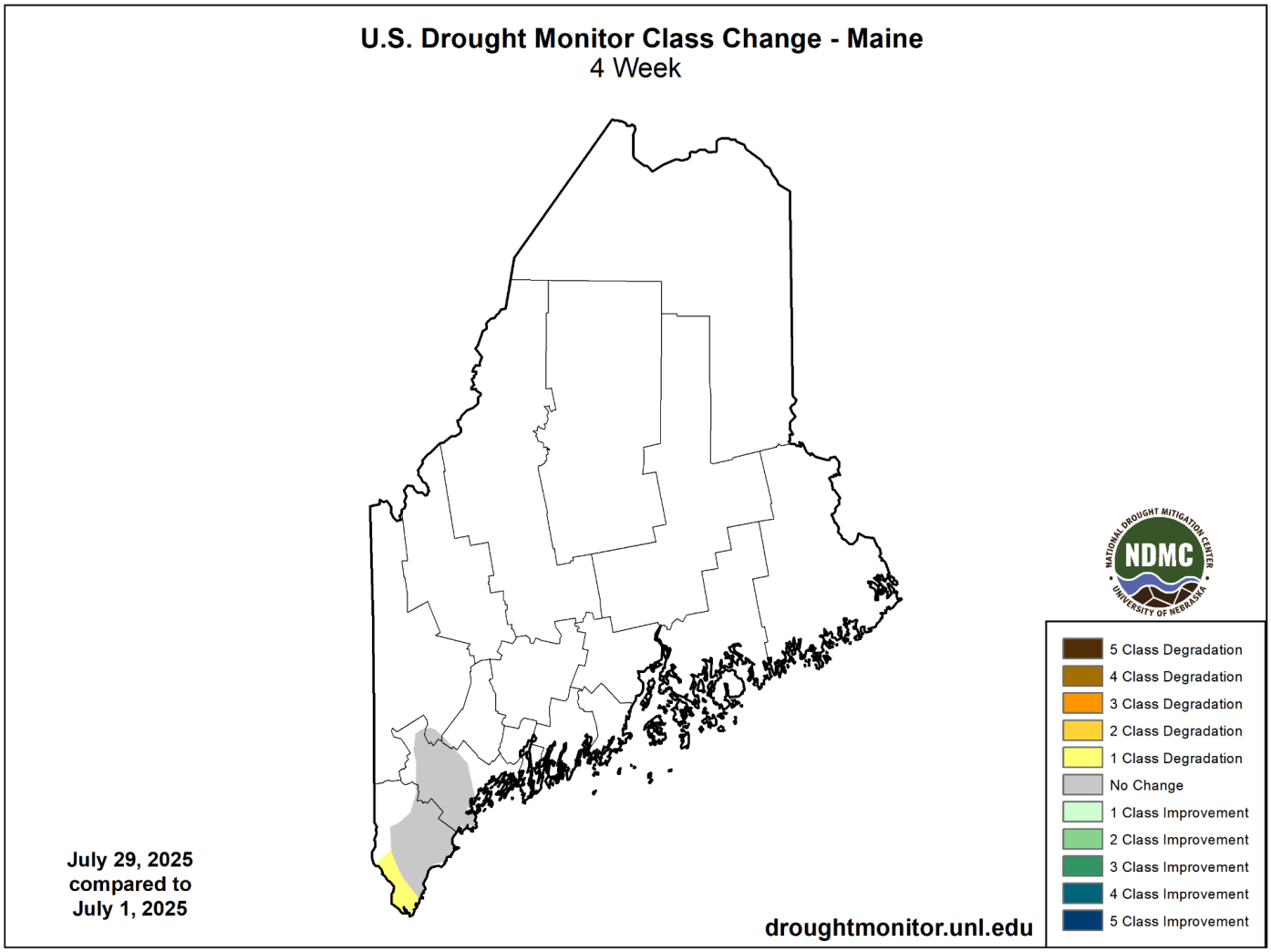
Author:

David Simeral
Western Regional Climate Center

droughtmonitor.unl.edu

Drought Monitor Change in July 2025



Week	None (%)	D0-D4 (%)	D1-D4 (%)	D2-D4 (%)	D3-D4 (%)	D4 (%)	DSCI
7/1/2025	96.45	3.55	0	0	0	0	4
7/29/2025	95.92	4.08	0	0	0	0	4
Change	-0.53	0.53	0	0	0	0	0