NWS Form E-5 (04-2006) (PRES. BY NWS Inst	U.S. DEPARTMENT OF COMME NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRA truction 10-924) NATIONAL WEATHER SER	HYDROLOGIC SERVICE AREA (HSA)
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		WFO Caribou, Maine
		REPORT FOR: MONTH YEAR
		March 2025
TO: H	Hydrologic Information Center, W/OS31	SIGNATURE
1	DAA's National Weather Service 325 East West Highway Iver Spring, MD 20910-3283	James Sinko - Meteorologist Hydrology Program Manager
č		DATE
		April 5, 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.

March 2025

March 2025 featured above average temperatures and precipitation for northern and eastern Maine thanks to a rather active weather pattern. We started March in weak La Niña conditions and by the end of the month we had transitioned to ENSO Neutral conditions. The North Atlantic Oscillation (NAO) monthly mean was +0.30 SD and the Pacific North American Pattern (PNA) monthly mean at -0.10 SD. Overall, the pattern featured significantly lower heights over Hudson Bay, Northwest Pacific Region while moderate higher heights noted over the Central North Atlantic. This resulted in ridging in the Western United States oriented from the four corners region to British Columbia in Canada. Generally broad long wave troughing in the Eastern United States with the jet stream being active throughout the month. March quickly turned above normal with warm air intrusion into systems in the early months that absolutely decimated the snowpack and started the thermal decay of river ice. The pattern for the rest of the month allowed for cold air intrusions but numerous events dragged warm air northward. More details discussed below...





Figure 1-4 Source: NOAA Physical Sciences Laboratory

Location	Total Precip	Normal Precip	Departure from Normal	% of Normal	Snowfall	Normal Snowfall	Departure from Normal	Greatest Snow Depth	Monthly Average Snow Depth
Frenchville*	1.87	1.47	0.40	127.2%					
Fort Kent	2.79	2.75	0.04	101.5%	17.1	19.0	-1.9	25	11.0
Van Buren	3.01	2.45	0.56	122.9%	8.8	17.5	-8.7	23	8.1
Caribou	3.92	2.77	1.15	141.5%	22.4	21.4	1.0	18	7.6
Houlton	3.59	2.67	0.92	134.5%					
Millinocket*	4.94	2.97	1.97	166.3%	9.5			13	4.6
Greenville*	4.11	3.19	0.92	128.8%					
Moosehead*	3.53	2.76	0.77	127.9%	8.5	18.4	-9.9	24	12.5
Dover-Foxcroft	3.98	3.39	0.59	117.4%	8.2	15.1	-6.9	16	6.8
Corinna	4.75	3.44	1.31	138.1%	5.3	13.4	-8.1	8	1.7
Bangor	4.87	3.22	1.65	151.2%	7.7	15.2	-7.5	12	1.9
East Surry	5.94	4.20	1.74	141.4%	6.7			10	1.9
Robbinston*	7.67	4.82	2.85	159.1%	13.0	18.9	-5.9	12	4.4
Topsfield*	6.26	4.54	1.72	137.9%	19.5	19.6	-0.1	9	4.4

Precipitation Totals for Select Locations (All Units in Inches)

*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 (rain and melted snow) was generally 130 to 170 percent of normal. Snowfall was near average across northern Aroostook County and below average further south. The highest impact event of the month was a long-duration event from the 5th to the 7th. Light snow in the north accumulated 1 to 2 inches before changing to rain. Rain continued regionwide through the 6th. Around 1 inch of rain fell in much of Aroostook County, while over 2 inches of rain fell in Washington County. Rain changed to snow for much of the region on the 7th. The falling temperatures caused standing water to freeze as snow fell on top of it. This resulted in numerous road closures in Aroostook County. The situation was compounded by wind gusts over 50 mph at times, which caused blowing and drifting of snow. To the north and east of Millinocket, 6 to 11 inches of snow fell, making this the largest snow event of March 2025 there. 2 to 6 inches of snow fell from south to north from the Bangor region to the Central Highlands. Less than 2 inches fell towards the Downeast Coast. Central and Southern areas saw their largest snow event of the month on the 24th. Snow amounts were mostly 4 to 7 inches away from the coast (where amounts were 3 inches or less). Across the north, amounts were lower as well, generally 1 to 3 inches in total. At the start of the month, snow cover was between 15 to 30 inches across the Central Highlands and the north, and 10 to 15 inches near Bangor and Downeast. Snow water equivalents were 2 to 5 inches in the Bangor and Downeast regions, and 5 to 10 inches for the Central Highlands and north. The Bangor region and Downeast lost all of their snow cover in the rain event and warmup on the 6th and 7th. A significant warmup from the 14th to the 20th resulted in significant snowmelt across central and northern areas. This resulted in ice jam flooding in several areas across Eastern & Northern Maine (more details below). The warmup was accompanied by rain from the 16th through the 18th. 1 to 2 inches of rain fell from the Central Highlands southward, with decreasing amounts further north. The rain ended with up to 2 inches of snow in northern Aroostook County. However, the thaw and snowmelt brought a halt to most winter recreation across the north. By the end of the month, there was no snow on the ground near Bangor and Downeast. Anywhere from a trace to 6 inches were on the ground from the Central Highlands into eastern Aroostook County. In the North Woods, 6 to 18 inches were on the ground, with the greatest amounts at higher elevations. There was a trace to 2 inches of snow water equivalent in the Central Highlands to eastern Aroostook County. Higher elevations in the North Woods had 5 to 7 inches of snow-water equivalent by the end of the month.

Looking at the Drought Monitor the rain and snowmelt helped improve drought conditions across northern and eastern Maine during March 2025. At the start of the month, the U.S. Drought Monitor placed areas south and east of Millinocket in the Moderate Drought (D1) category. Most of the rest of the region was in the Abnormally Dry (D0) category. The exceptions were the Saint John Valley and along the Quebec border. By the end of the month, D1 was confined to Deer Isle and other outer islands in Hancock County. There was D0 along the remainder of the Downeast Coast and in much of Piscataquis County. The rest of the area did not have drought conditions by the end of the month. At the start of the month Frost Depths in Northern Maine ranged from 25-35 inches with isolated depths to 40 inches thanks to the lack of snow this winter before February 2025. Across the Downeast into the Central Highlands the frost depths ranged from 10-25 inches with isolated depths to 35 inches in spots. By the end of the month there was some surface thawing ongoing in many locations in the Central Highlands to Downeast Coast. Across Northern Maine at most surface thawing was just 0.5-1.5 inches. In Downeast areas significant thawing did take place with some areas thawing completely out but by the end of the month some locations still had a lot of frost 10-15 inches. Many locations in the Central Highlands remained frozen 10-20 inches with some surface thawing to 1-3 inches. Groundwater started the month very poor in well below normal conditions across the Central Highlands to Downeast Coast with normal conditions in the North Woods and the rest of the Crown of Maine. By the end of the month we experienced improvements with Northern Maine seeing conditions improve to well above normal. The Central Highlands sneaked just slightly into normal conditions while the Bangor Region to Downeast Coast increased to normal and then above normal conditions. See more in the graphics below...

Streamflows started the month well below normal in most locations given the low flows during this later half of Meteorological winter. The significant warm up, rain on snow events quickly brought our rivers to well above normal conditions in most locations with some Downeast areas at normal due to dam regulations. The caveat to this statement is rivers were still below normal flows compared to normal ice out season (Late March - April) but our ice out here in Maine was very early for this year. So the above normal flows were compared to a deep history of rivers still typically frozen and low flows before snowmelt / runoff season. By the end of the month flows continued to fall back down to slightly above normal to normal conditions thanks to much of the snowmelt spring runoff being complete. The only exception is from the Moosehead Region to Baxter to all points in the North Woods where snow does remain and slowly melted into the end of March 2025. In terms of Water Storage the Penobscot River system started the month at 43.6% full which was 16.9% above long term average. Ripogenus Dam storage started the month at around 13 Billion Cubic Feet of water storage above the dam which was within normal ranges for March. The Union River storage started the month at 59.4% full which was 30.7% above long term averages. The Penobscot River system ended the month at 64.6% full which was 5.3% above long term average thanks to the early ice out and spring runoff, statistically this was near normal because of the early season conditions. Ripogenus Dam storage ended the month at around 22.5 Billion Cubic Feet of water storage above the dam which was within the wet range because once again it was a very early spring runoff. The Union River storage ended the month at 87.8% full which was 86.9% above long term averages. This seems extremely high but that is attributed to the early spring runoff when compared to long term statistical data.

In terms of **River Ice** there was solid white/grey ice on the rivers with widespread coverage across the Hydrological Service Area with no movement noted on any river in the forecast area at the very beginning of the month. The Bangor Region and Downeast lost all of their snow cover in a region wide rain on snow event and warmup on the 6th and 7th. This began immediately the ice break up process across much of the Downeast rivers and started to significantly decay ice on the Central Highland & Northern Maine rivers. We began to see Downeast ice shifting and breaking up which was rather thick at the time when 1-3 inches of snow water equivalent was discharged into the rivers thanks to deep frost. Ice Out 2025 really kicked into high gear when a significant warmup from the 14th to the 20th resulted in significant snowmelt across Central Highlands into far Northern Maine.

On March 18th a large breakup occurred on the Pleasant River in Milo that resulted in a significant ice jam getting hung up on the Pleasant St bridge. This jam grew in size and began to cause several areas of the Pleasant River Road to flood, resulting in emergency officials shutting that road down. Pleasant St to Medford Road was shut down when flooding surrounded the Pleasant St bridge. A lot of low lying fields of properties flooded along the Pleasant River downstream to the Piscataquis River confluence near the Medford Road. Initially a Flood Advisory was issued but an upgrade to a Flood Warning occurred in the evening due to increased flows posing an increased risk in rapid break of the ice. The Flood Warning was replaced with an Advisory on March 20th and the jam broke in the early morning hours of March 21st and discharged its ice into the Piscataquis River uneventful with just leaving bank ice (photos below).

On March 18th rapid natural flow rises on the Kenduskeag Stream in Bangor resulted in the need of a Flood Advisory as the stream rose to 10.24ft rapidly. Although not due to ice there were chunks flowing downstream, trained weather spotters reported the Kenduskeag Stream was causing minor flooding of low lying properties upstream of Six Mile Falls. The Kenduskeag Stream did fall rapidly back below flood stage but remained in Action Stage till the morning of March 19th with nearly 3500cfs flow (Photo below).

During the morning hours of March 19th, Aroostook County Emergency Management alerted NWS Caribou to flooding from the Mattawamkeag River in South Bancroft to Wytopitlock. This flooding was caused by an Ice Jam

and the flooding resulted in the Bancroft Road being closed East of Wytopitlock. That jam broke and discharged downstream peacefully in the late afternoon of March 19th (photos below). Ice on this day broke free along the Aroostook River and St. Croix Stream in Masardis (photos below).

March 20th was a significant day with huge ice movement on the Aroostook River, St. John River and then March 21st the complete discharge of the Allagash River. Incredible pictures and videos were shared with the office on these days and on the <u>Aroostook County Flood Watch Facebook page</u>. An ice jam on the Aroostook River developed late on March 20th resulting in flooding of the Grimes Road & North Caribou Road in Caribou/Fort Fairfield. This is a typical location of flooding due to ice jams but this year was very early compared to historical memories. This jam lasted and continued to flood until the afternoon of March 26th when water levels finally dropped (photos below). A large ice jam developed on March 20th-21st on the Aroostook River in Wade/Castle Hill that resulted in significant flooding of the private camp road above Gardner Creek. Although this area does flood yearly, longtime residents of the camps reported to the office that water levels were the highest they had ever seen with even 1 camp seeing 2 inches of water into the first floor. This jam lasted through March 27th when water levels finally dropped and the Flood Advisory was cancelled. It's important to note that the ice jams in Fort Fairfield & Wade remained in place through the end of the month since the ice grinded down into the river bed likely due to the low flows and presents of anchor ice.

March 21st in the morning an Ice Jam developed from St. John River ice in Allagash near the St. Francis townline along Route 161. At 6:12AM EDT, NWS Caribou received a call from the St. Francis Fire Chief reported that the jam was locked in and water was rapidly rising due to backwater from the jam and a Flood Advisory was issued. Later in the afternoon the jam broke free and the ice flushed to the St. Francis and St. John Plantation townline. That evening when the ice cleared the confluence of the St. John River & Allagash River was the moment the Allagash River completely gave way and the entire river discharged into the St. John River. One of our Skywarn Spotters captured the incredible moment in a Facebook video. Another one of our Skywarn Spotters in Allagash caught the Allagash running moment in a Facebook video. All this ice did eventually get stuck in St. Francis and St. John Plantation where it remained through the end of the month rotting while water did rise initially flooding low lying flood plain areas it did drop by the end of the month leaving ice all over the banks, flood plain and other low lying areas (photos below).

At the end of the month ice remained jammed around the Nine Mile river gage in the North Woods and downstream near Seven Islands but posing no issues with minor water backwater occurring. Ice remained stuck in St. John Plantation as noted above. Ice was rotting in place from Grand Isle to Hamlin but posing no risk as much of the ice was thermally rotten sheet ice but with low flows no break up occurring. See below satellite imagery of the remaining ice at the end of the month. Otherwise the end of March Ice Out was completed on nearly all rivers in Eastern & Northern Maine which was statistically early for this region of Maine.

We at National Weather Service Caribou, Maine want to thank all of our weather spotters, county Emergency Management officials, local fire departments & police departments, the general public and all that reported ice conditions to us during the ice out process. Your information is extremely valuable to allow us to get warnings out to communities upstream and downstream of where you live. Ice can be very unpredictable and early reports before things happen is crucial information. On behalf of the entire National Weather Service Caribou, Maine staff we thank you!

Temperatures across the region ranged from 2.5 to 4.5 degrees (F) above the 1991-2020 averages. In total, Caribou saw 6 days in March 2025 where the high temperature was at or above 50 degrees. The record for the most days with a high of 50F or greater in Caribou is 7 days (1977, 2012, 2021). Records in Caribou date back to

1939. In Millinocket, there were 8 days with a high of at least 50F, the 8th most on record. The record in Millinocket is 15 days (1946). Records in Millinocket date back to 1903. In Houlton, there were 7 such days, which was the 3rd most on record. The greatest number of days with a high of 50F or greater in Houlton is 10 (2012, 2021). Records in Houlton date back to 1948.

Town/City	Avg Monthly	Normal Monthly	Departure from
Town/City	Temperature (°F)	Temperature (°F)	Normal (°F)
Frenchville	26.8	24.5	2.3
Fort Kent	23.5	20.9	2.6
Van Buren	24.8	20.9	3.9
Caribou	28.7	25.0	3.7
Houlton	29.5	25.5	4.0
Millinocket	31.9	27.6	4.3
Greenville*	28.5	25.6	2.9
Moosehead	27.6	23.9	3.7
Dover-Foxcroft	30.7	26.8	3.9
Corinna	33.1	29.6	3.5
Bangor	33.1	30.6	2.5
East Surry	32.9	31.0	1.9
Robbinston*	33.4	30.8	2.6
Topsfield*	30.0	27.4	2.6

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



River	Monthly Mean Flow (cfs)	% Normal (mean)	Percentile Class	Drainage (mi²)	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	14088	350%	Much Above Normal	5929	97
Fish River near Fort Kent	1633	255%	Much Above Normal	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	166	22%	Low	413	95
St. Croix River at Baring	2491	78%	Normal	1374	64
Grand Lake Stream at Grand Lake Stream	72	15%	Much Below Normal	228.3	95
Narraguagus River at Cherryfield	1214	165%	Above Normal	227	76
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	1277	210%	Much Above Normal	326	69
Piscataquis River at Medford	NA	NA	Ice Impacted	1162	92
Penobscot River at West Enfield	NA	NA	Ice Impacted	6422	121

March Average Monthly Streamflows *Data provided by the U.S. Geological Survey*

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

March Monthly Average Groundwater Levels





Figure 11-16: Groundwater Level Yearly Plots to Current Source: <u>United States Geological Survey</u>

Flow or Water Level	Percentile Range	Explanation
Ice Impacted	NA	Ice impacted resulting in No Data available
Low	O 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.

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

Product	How Many Issued	Reason for Issuance
Flood Warning	1	Ice Jam Flooding
Flood Advisory	7	Ice Jam Flooding
Flood Advisory	1	Excessive Runoff

CoCoRaHS Complete Precipitation Reports www.cocorahs.org March 2025

Station Number	Station Name/Location	Total Precipitation (inches)	Total Snowfall (inches)
ME-AR-15	Presque Isle 1.3 WSW	4.07	22.2
ME-AR-18	New Sweden 4.9 NNW	3.49	21.4
ME-AR-41	Castle Hill 1.0 S	3.88	27.0
ME-AR-42	Houlton 2.5 NNW	4.06	NA
ME-HN-2	East Surry	5.71	6.7
ME-HN-4	Mariaville 1.4 ESE	5.73	6.4
ME-PN-10	Lincoln 4.3 NE	5.02	9.3
ME-PN-55	Orono 1.1 SSW	5.56	9.6
ME-PN-58	Hudson 2.4 ESE	5.48	7.3
ME-PN-59	Glenburn 1.5 ENE	5.97	10.6
ME-PS-9	Abbot 4.6 WNW	4.12	7.6
ME-WS-31	Eastport 1.4 ESE	6.91	4.0
ME-WS-34	Perry 3.8 NNW	6.67	7.6
*Add	itional CoCoRaHS reports were n	ot complete with 28 days of i	record

Source: https://cocorahs.org/ViewData/TotalPrecipSummary.aspx





Week	None (%)	D0-D4 (%)	D1-D4 (%)	D2-D4 (%)	D3-D4 (%)	D4 (%)	DSCI
3/4/2025	7.31	92.69	38.12	0.00	0	0	131
3/25/2025	45.81	54.19	8.17	0.00	0	0	62
Change	38.50	-38.50	-29.95	0.00	0	0	-69

Drought Monitor Change in March 2025

Disclaimer: There is no particular order of these images

St. John River @ Dickey Bridge on March 20, 2025 Courtesy: Maine DOT



Aroostook River @ Caribou Dam on March 20, 2025 Courtesy: James Sinko - NWS Caribou



Pleasant River @ Milo Pleasant St. Bridge on March 18, 2025 Courtesy: Piscataquis County Emergency Management





Pleasant River @ Milo Pleasant St. Bridge on March 18, 2025 Courtesy: Piscataquis County Emergency Management

Pleasant River @ Milo Pleasant St. Bridge on March 18, 2025 Courtesy: Piscataquis County Emergency Management



Pleasant River @ Milo Pleasant St. Bridge on March 18, 2025 Courtesy: Piscataquis County Emergency Management



Mattawamkeag River, South Bancroft, Bancroft Road on March 20, 2025 Courtesy: Aroostook County Flood Watch



Aroostook River, Gardner Creek on March 22, 2025 Courtesy: Aroostook County Flood Watch



Aroostook River, Gardner Creek, Wade on March 22, 2025 Courtesy: Aroostook County Flood Watch





Aroostook River, Grimes Road, Caribou on March 22, 2025 Courtesy: Aroostook County Flood Watch

Aroostook River, Grimes Road, Caribou on March 22, 2025 Courtesy: Aroostook County Flood Watch



Aroostook River, Grimes Road, Caribou on March 22, 2025 Courtesy: Aroostook County Flood Watch



Aroostook River, Fort Fairfield on March 21, 2025 Courtesy: Mark Bloomer - NWS Caribou Meteorologist



Aroostook River, Fort Fairfield on March 21, 2025 Courtesy: Mark Bloomer - NWS Caribou Meteorologist



Aroostook River, Fort Fairfield on March 22, 2025 Courtesy: Fort Fairfield Police Department



Kenduskeag Stream, Bangor on March 18, 2025



Presque Isle Stream, Mapleton on March 18, 2025 Courtesy: Aroostook County Flood Watch



Reed Plantation on March 19, 2025 Courtesy: Aroostook County Flood Watch



Next 2 Photos, Aroostook River, Gardner Creek, Wade on March 21, 2025 Courtesy: Aroostook County Flood Watch





Next 7 Photos, Aroostook River, Fort Fairfield on March 21, 2025 Courtesy: Kevin St. Peter









Next 2 Photos, Aroostook River, Fort Fairfield on March 23, 2025 Courtesy: Roxanne Bubar





Next 3 Photos, Aroostook River, Caribou, Grimes Road on March 24, 2025 Courtesy: Aroostook County Emergency Management



Next 7 Photos, Aroostook River, Gardner Creek Road Wade/Castle Hill on March 22, 2025 Courtesy: Maine Forest Service









Next 2 Photos, Aroostook River, Grimes Road Caribou/Fort Fairfield on March 22, 2025 Courtesy: Maine Forest Service





Next 5 Photos, St. John River, St. Francis/St. John Plantation on March 22, 2025 Courtesy: Maine Forest Service







Aroostook River, Wade, Private Camp Road on March 20, 2025 Courtesy: Vicki Gagnon



St. Croix Stream, Masardis on March 19, 2025 Courtesy: Aroostook County Flood Watch

