

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            YEAR  
**December      2020**

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

SIGNATURE  
**Joseph Hewitt, HPM**

DATE  
**January 14<sup>th</sup>, 2021**

*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.

**December 2020**

Two flooding events took place during the month of December.

The first flood event occurred on the 1<sup>st</sup> with heavy rain causing flooding on the Piscataquis and Pleasant Rivers in Piscataquis County. The Piscataquis River at DOVM1(Dover-Foxcroft) crested at 12.21 ft on the 1<sup>st</sup>. Flood stage is 11.0 ft. There were reports of roads being flooded. An Areal Flood Warning was issued on the 1<sup>st</sup> for flooding in southern Piscataquis County with numerous roads flooded. Record warmth and heavy rain on Christmas Day(12/25) produced flooding in southern Piscataquis County. The Piscataquis River and Pleasant Rivers went out of their banks. The Piscataquis River at DOVM1 crested above flood stage at 13.25 ft. Once again, numerous roads were flooded and closed. A car stalled in the flooded waters on the 25<sup>th</sup>. An Areal Flood Warning was issued with reports of significant flooding.

Precipitation for the month of December was above normal with the exception of the St. John Valley, as precipitation at Frenchville came in below normal. Two significant rain events occurred with one on the 1<sup>st</sup> which delivered 1 to 2 inches across the region. The other rain event came on Christmas Day(12/15) with southern Penobscot and Piscataquis Counties receiving 1 to 3 inches of rain. Further north, rainfall was much less. Caribou came in 3.89 inches of precipitation for the month, which was 0.62 inches above normal. Bangor came in with 4.52 inches of rain for the month, which was 1.04 above normal. Millinocket had 4.02 inches, which was 1.15 inches above normal. Finally, Houlton recorded 4.02 inches, which was 0.73 inches above normal.

Snowfall was slightly above normal across portions of Northern Maine into the St. John Valley. Caribou came in with 26.3 inches of snow for the month, which was 3.4 inches above normal. Snowfall across the Maine Central Highlands into the Downeast region, including the coast was below normal for December. Bangor recorded only 5.7 inches of snow, which was 8.7 inches below normal. The big snow event occurred on the 5<sup>th</sup> and 6<sup>th</sup> with 8-13 inches of snow being recorded across Northern Maine. The maximum snow depth for Caribou was 11 inches on the 15<sup>th</sup>. The snowpack was reduced drastically by Christmas day due to a warm and wet airmass. By Christmas night, the snow depth at Caribou was reduced to zero. As a matter of fact, the snow across the St. John Valley and the Allagash was reduced to

trace amounts. Colder air wrapping in behind the departing system brought 3 to 4 inches of new snow by the evening of the 26<sup>th</sup> and then some more snow arrived on the 31<sup>st</sup>.

December was a mild month with temperatures averaging 6 to 8 degrees above normal. December was a top 10 warmest December for all the climate sites. Caribou recorded an average monthly temperature of 26.0 degrees, which was 7.8 degrees above normal. Houlton recorded an average monthly temperature of 30.8 degrees, which was 6.2 degrees above normal. Houlton came in with an average monthly temperature of 27.3 degrees, which was 7.3 degrees above normal. Millinocket recorded an average monthly temperature of 28.5 degrees, which was 6.1 degrees above normal. All time record warmth occurred on the 1<sup>st</sup> with Caribou recording a record high temperature of 60 degrees. This high temperature not only broke a daily and monthly temperature record, but also it surpassed the all-time Meteorological Winter high temperature of 59 degrees set on February 20<sup>th</sup>, 1994. Houlton observed of high temperature of 60 degrees, which was a record high temperature for the month. The old record was 59 degrees set on December 11<sup>th</sup> 1969. In Millinocket, the high temperature of 60 degrees on the 1<sup>st</sup> was the 3<sup>rd</sup> warmest December day on record. Bangor set a record high temperature of 61 degrees on the 1<sup>st</sup>, which broke the previous daily record high temperature of 59 degrees, set back in 2006. There was a cold stretch from the 15<sup>th</sup> through the 19<sup>th</sup> with 4 nights of below zero temperatures across Northern Maine, especially Northern and Central Aroostook County. This cold snap helped set up some ice on the rivers as far south as the Piscataquis River up to Christmas Day, the 25<sup>th</sup>. The warmth and rainfall aided in eroding the ice, which allowed the ice to break up and flush out in most places. However, a few ice jams did set up on a couple of Northern Maine rivers. See the next paragraph for further details.

Streamflows across the region continued to show improvements in December with much of the region seeing much above normal flows, such as the St. John, Aroostook, Penobscot and Piscataquis basins. The Downeast rivers saw flows above normal such as on the Narraguagus River at Cherryfield. Ice jams set up on the Aroostook River in the Fort Fairfield area around December 27<sup>th</sup> due to the returning colder weather. A smaller ice jam set up near the Grand Isle area on St. John River. Other than these two areas, the rivers were freely flowing with some frazil ice from time to time.

Wells across the region continued to see improvement in December. Wells in Northern Maine and the Maine Central Highlands saw normal levels increase to above or much above normal. The Bangor and Downeast region reported near normal levels, with the exception of Calais, where groundwater levels were above normal.

In regards to Drought monitoring, the region continued to see dramatic improvement during the course of December thanks to the rainfall. Conditions across the northern and central region improved by one Category with both areas seeing Normal conditions. The Downeast region to the coast showed improvement as well with most of the region going from **Abnormally Dry/Moderate** to Normal.

### Precipitation Totals for Select Locations with all units in inches

Location	Total Precip	Normal Precipitation	Departure from Normal	Snowfall	Normal Snowfall	Departure from Normal Snowfall	Greatest Snow Depth
Frenchville	1.50	2.54	-1.04	NA	NA	NA	NA
Caribou	3.89	3.27	+0.62	26.3	22.9	+3.4	11

Houlton	4.02	3.29	+0.73	NA	NA	NA	NA
*Millinocket	4.68	3.53	+1.15	10.5	NA	NA	6
Bangor	4.52	3.48	+1.04	5.7	14.4	-8.7	3

\*Millinocket snowfall measured at wastewater treatment plant, not the ASOS site. Data might not be available every month.

### December Stream Flows for Selected Rivers

River	Normal Flow (cfs)	Monthly Mean Flow (cfs)	Monthly Mean (in)	Percentile Class	Drainage (mi <sup>2</sup> )	Years of Record
St. John River at Ninemile Bridge	NA	NA	NA	NA	1341	70
St. John River at Fort Kent	3530 - 7560	17200	3.34	Much Above Normal	5929	94
Aroostook River at Washburn	NA	NA	NA	NA	1654	90
Narraguagus River at Cherryfield	362 - 932	1200	6.09	Above Normal	227	72
E Br Penobscot River at Grindstone	NA	NA	NA	NA	837	118
Mattawamkeag nr Mattawamkeag	1430 - 3580	6430	5.23	Much Above Normal	1418	86
Piscataquis River nr Dover-Foxcroft	262 - 778	2130	8.24	Much Above Normal	298	118

### Groundwater Levels

Station	Normal Range (ft)	Mean Water Level Below Land-sfc Datum (ft)	Departure from Month-end Median (ft)	Percentile Class	Years of Record
Amherst	19.00 - 17.10	18.93	1.33	Normal	30
Crooked Road	NA	NA	NA	NA	15
Hadley Lakes	5.47 - 4.10	4.32	-0.32	Normal	35
Kenduskeag	22.20 - 19.60	19.69	-1.31	Normal	42
Calais	1.66 - 0.46	0.29	-0.68	Above Normal	21
Millinocket	10.80 - 9.22	8.82	-0.88	Above Normal	27

Clayton Lake	14.60 – 13.40	12.84	-1.46	Much Above Normal	42
Fort Kent	11.50 – 8.41	7.44	-2.36	Above Normal	43

Flow or Water Level	Percentile Range	Explanation
Record 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.
Very Low	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.
Low	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.
High	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.
Very High	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.
Record 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.

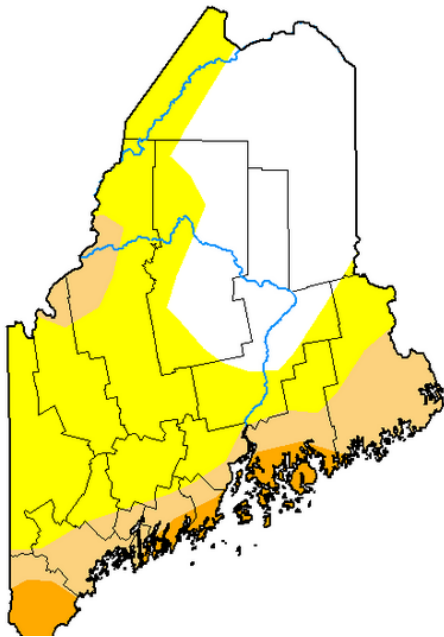
**Non-Routine Hydrologic Products  
December 2020  
WFO Caribou, ME**

WMO Identifier	Date	Issuance	Name of Product
PWMFLWCAR	12/1	1343Z	River Flood Warning for the Piscataquis River at DOVM1
PWMFLSCAR	12/1	2231Z	Continuation of the River Flood Warning at DOVM1
PWMFLSCAR	12/2	0858Z	Cancellation of the River Flood Warning at DOVM1
PWMFLSCAR	12/1	1803Z	Areal Flood Advisory for Piscataquis County
PWMFLWCAR	12/1	2356Z	Cancellation of the Areal Flood Warning for Piscataquis County
PWMFLWCAR	12/25	1420Z	Areal Flood Warning for Piscataquis County



## Drought Conditions for December 2020

### U.S. Drought Monitor Maine



**December 1, 2020**  
(Released Thursday, Dec. 3, 2020)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	31.74	68.26	21.34	5.40	0.00	0.00
<b>Last Week</b> 11-24-2020	18.53	81.47	60.42	10.81	1.55	0.00
<b>3 Months Ago</b> 09-01-2020	0.00	100.00	79.48	32.70	0.00	0.00
<b>Start of Calendar Year</b> 12-31-2019	100.00	0.00	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> 09-29-2020	0.00	100.00	100.00	83.86	7.28	0.00
<b>One Year Ago</b> 12-03-2019	100.00	0.00	0.00	0.00	0.00	0.00

Intensity:

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate 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>

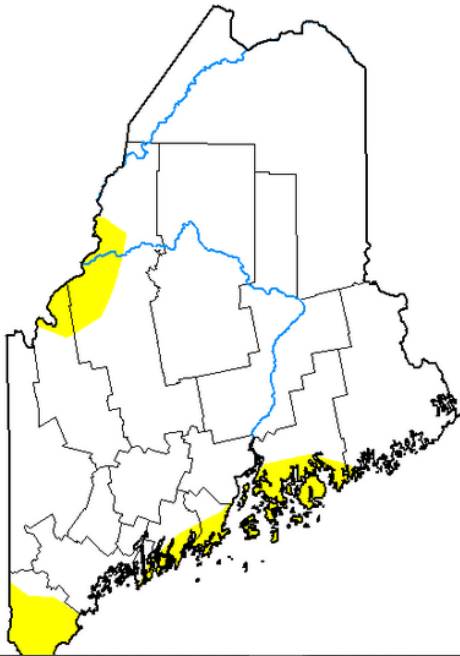
Author:

Richard Heim  
NCEI/NOAA



**U.S. Drought Monitor**  
**Maine**

**December 29, 2020**  
(Released Thursday, Dec. 31, 2020)  
Valid 7 a.m. EST



*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	91.54	8.46	0.00	0.00	0.00	0.00
<b>Last Week</b> <i>12-22-2020</i>	78.43	21.57	5.53	0.00	0.00	0.00
<b>3 Months Ago</b> <i>09-29-2020</i>	0.00	100.00	100.00	83.86	7.28	0.00
<b>Start of Calendar Year</b> <i>12-31-2019</i>	100.00	0.00	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> <i>09-29-2020</i>	0.00	100.00	100.00	83.86	7.28	0.00
<b>One Year Ago</b> <i>12-31-2019</i>	100.00	0.00	0.00	0.00	0.00	0.00

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>*

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