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 **December** YEAR **2019**
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 24, 2020**

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.

No major flooding was reported in December.

December came in with above normal temperatures for the region. Temperatures ranged from 1 to 3 degrees above normal across the region.

Precipitation came in slightly below normal for a majority of the region, with the St. John Valley and Northwest Maine coming in with monthly precipitation around 1 inch below normal. The Millinocket and Mt. Katahdin interestingly enough, came in with precipitation slightly above normal. Millinocket came in with 3.66 inches, which was 0.13 inches above normal. Caribou recorded 2.91 inches of precipitation, which was 0.36 inches below normal. Bangor came with 3.21 inches, which was 0.27 inches below normal. Frenchville came in with 1.48 inches, which was 1.06 inches below normal.

Snowfall for the month of December was below normal across the HSA. Caribou recorded 17.9 inches of snow for the month, which was 5.0 inches below normal. Bangor came with 16.2 inches of snow for the month, which was 1.8 inches below normal. Caribou's highest snow depth was 16 inches on the 4th. There were 4 inches of snow on the ground at the end of the month. Bangor's highest snow depth was 7 inches from the 20th to the 21st, with 2 inches of snow left on ground at the end of the month. A storm brought 5 to 10 inches of snow to the HSA on the 3rd and 4th. The highest snowfall was recorded in Caribou with 10.2 inches, while Bangor recorded 5.5 inches. Two significant rain events occurred with a warm up that reduced the snowpack substantially. The most significant event came on the 14th and 15th with over an inch of rainfall and temperatures soaring into the upper 40s to mid 50s. Colder air followed on the 16th and held on toward the end of the month. The snowpack did recover some by the end of the month as a storm system brought 4 to 6 inches of fresh snow to the region.

Ice that had set up on the rivers broke up across all the river basins with the warm up that took place during the middle of the month. As a matter of fact, ice flushed out the Penobscot and St. Croix Rivers. Ice did reform on the rivers by the end of the month. The thickest ice was across the northern rivers such as the Allagash, St. John and Aroostook with thicknesses of 6 to 12 inches. Across the southern rivers, the ice cover was thin and less than 6 inches. An ice jam set up on the Aroostook River in the

town of Fort Fairfield around the 18th. The jam was about 3 miles long with some open water toward the Caribou town line.
Streamflows across the HSA were near normal across the St. John, Aroostook and Piscataquis River basins, while the Penobscot and St. Croix basins were above normal, which included the Narraguagus River.

Groundwater conditions were above normal levels across much of the HSA. The exception was the Clayton Lake and Millinocket region as groundwater levels were near normal for December.

In regards to Drought Monitoring, conditions for the entire HSA continued in the normal range.

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	1.48	2.54	-1.06	NA	NA	NA	NA
Caribou	2.91	3.27	-0.36	17.9	22.9	-5.0	16
Houlton	2.83	3.29	-0.46	NA	NA	NA	NA
*Millinocket	3.66	3.53	+0.13	NA	NA	NA	NA
Bangor	3.21	3.48	-0.27	16.2	-1.8	+14.4	7

*Millinocket snowfall measured at wastewater treatment plant, not the ASOS site. Data was not available at this time.

Stream Flows for Selected Rivers

River	Normal Flow (cfs)	Monthly Mean Flow (cfs)	Monthly Mean (in)	Percentile Class	Drainage (mi^2)	Years of Record
St. John River at Ninemile Bridge	NA	NA	NA	NA	1341	69
St. John River below Fish River at Fort Kent	3520 –7570	6250	1.22	Normal	5929	93
Aroostook River at Washburn	NA	NA	NA	NA	1654	89
Narraguagus River at Cherryfield	353- 928	1170	5.94	Above Normal	227	71
E Br Penobscot River at Grindstone	NA	NA	NA	NA	837	117
Mattawamkeag River near Mattawamkeag	1390 – 3490	4420	3.59	Above Normal	1418	85
Piscataquis River nr Dover-Foxcroft	261-783	763	2.95	Normal	298	117

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
McFarland Hill	NA	NA	NA	NA	15
Amherst	19.30 - 17.20	16.59	-1.31	Much Above Normal	29
Hadley Lakes	5.50 - 4.21	3.75	-0.89	Above Normal	34
Kenduskeag	22.30 – 19.80	19.09	-2.01	Above Normal	41
Calais	1.72 – 0.52	-0.37	-1.35	High	20
Millinocket	10.80 – 9.21	10.18	0.56	Normal	26
Clayton Lake	14.60 – 13.40	14.06	-0.24	Normal	41
Fort Kent	11.60 – 8.45	7.69	-2.17	Above Normal	42

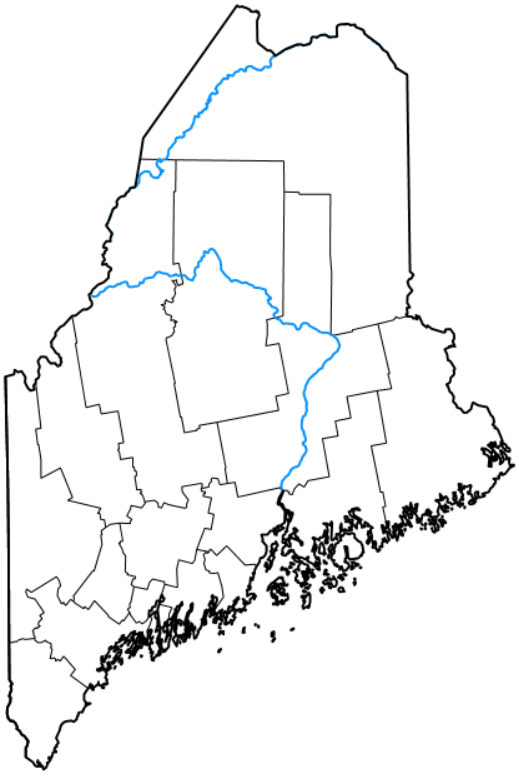
Flow or Water Level	Percentile Range	Explanation
Low	0th	The monthly mean streamflow or median water level during this month is the lowest ever recorded during the period of record for this site.
Much below normal	0th to 10th	The monthly mean streamflow or median water level during this month is less than the 10th percentile when compared to all of the months during the period of record for this site.
Below normal	10th to 25th	The monthly mean streamflow or median water level during this month is between the 10th and 25th percentiles when compared to all of the months during the period of record for this site.
Normal	25th to 75th	The monthly mean streamflow or median water level during this month is between the 25th and 75th percentiles when compared to all of the months during the period of record for this site.
Above normal	75th to 90th	The monthly mean streamflow or median water level during this month is between the 75th and 90th percentiles when compared to all of the months during the period of record for this site.
Much above normal	90th to 100th	The monthly mean streamflow or median water level during this month is greater than the 90th percentile when compared to all of the months during the period of record for this site.
High	100th	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
September 2019
WFO Caribou, ME

PIL	TIME (UTC)	Date	Description

Drought Conditions for December 2019

U.S. Drought Monitor
Maine



December 3, 2019
(Released Thursday, Dec. 5, 2019)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week *11-26-2019*	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago *09-03-2019*	99.01	0.99	0.00	0.00	0.00	0.00
Start of Calendar Year *01-01-2019*	94.48	5.52	0.00	0.00	0.00	0.00
Start of Water Year *10-01-2019*	87.45	12.55	0.00	0.00	0.00	0.00
One Year Ago *12-04-2018*	91.32	8.68	0.00	0.00	0.00	0.00

Intensity:

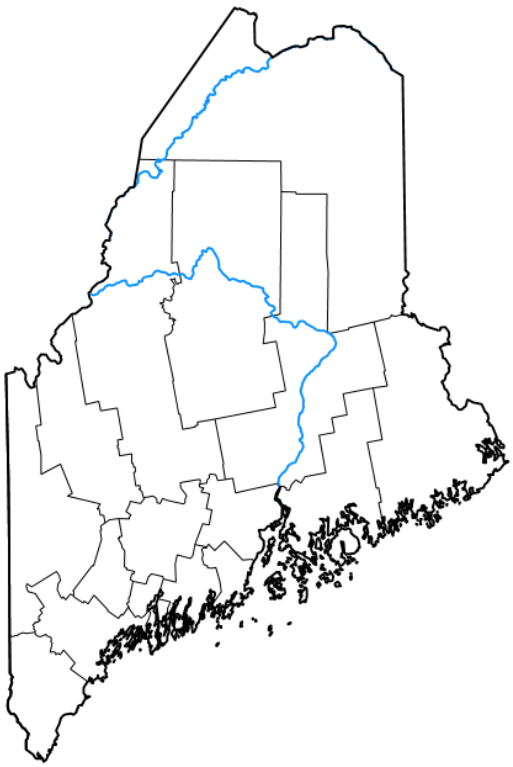
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:
Deborah Bathke
National Drought Mitigation Center

droughtmonitor.unl.edu

U.S. Drought Monitor
Maine



December 31, 2019
(Released Thursday, Jan. 2, 2020)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	100.00	0.00	0.00	0.00	0.00	0.00
Last Week *12-24-2019*	100.00	0.00	0.00	0.00	0.00	0.00
3 Months Ago *10-01-2019*	87.45	12.55	0.00	0.00	0.00	0.00
Start of Calendar Year *01-01-2019*	94.48	5.52	0.00	0.00	0.00	0.00
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