

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 REPORT FOR: MONTH YEAR July 2021
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		SIGNATURE Joseph Hewitt, HPM
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283		DATE August 23rd, 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.

July 2021

There was flash flooding in July. This event took place on July 9th due to heavy rain from Tropical Storm Elsa, which produced flash flooding around the Bangor region of southern Penobscot County. A Flash Flood Warning was issued with reports of flooded roads and road closures. Rainfall of 2-4 inches was recorded for that event.

Precipitation for the month of July was above normal with the exception of NE and NW Aroostook County, as those areas were below normal by 1 to 2 inches. At Bangor, 7.67 inches of rain was recorded for the month, which was 4.51 inches above normal. This made it the all-time wettest July on record. Caribou came in 2.94 inches of rain for the month, which was 1.29 inches below normal. Houlton recorded 3.93 inches of rain, which was 0.33 inches above normal. Millinocket recorded 4.72 inches of rain, which was 0.56 inches above normal. The biggest rain event occurred on July 9th due to Tropical Storm Elsa. Rainfall of 2 to 4 inches fell across central and Downeast areas, while far Northern Maine received 0.50 to 1.00 inch of rainfall. Bangor recorded a 24 hr rainfall total of 3.48 inches on the 9th. Houlton and Millinocket both recorded 24 rainfall totals of 1.79 inches on the 9th. Caribou recorded a 24 hr rainfall of 1.13 inches.

July came in below normal for average monthly temperatures with sites across the region coming with 2 to 3 degrees below normal. It was coolest July since 2009 for many of the climate sites. The warmest temperature for the entire month of July was 84 degrees on the 19th. Bangor recorded its highest temperature of 85 degrees on the 15th. Houlton recorded its highest temperature for the month of 82 degrees on the 15th and 16th. This is quite unusual as Caribou averages 4 days with a high of 85 degrees or warmer in July, with Bangor averaging 8 days of 85 degrees or warmer.

There was some improvement in the streamflows for a few of the river basins, such as at the headwaters of the St. John River in far western Aroostook County, where flows climbed to near **normal** for the month of July, as did the Cherryfield gage on the Narraguagus River and the Mattawamkeag River at Mattawamkeag. Otherwise, streamflows were well below normal with the Piscataqujs River at Dover-Doxcroft remaining at **record low** flows. The St. John River at Fort Kent and the East Branch of the Penobscot River at Grindstone came in with **well below normal** streamflows.

There was considerable improvement in the groundwater levels for the Downeast region and southern Penobscot region with a number of wells reaching **normal** levels. The Calais well came in with **above normal** levels. Groundwater levels were below normal to record low levels across northern and western areas. Millinocket came in with **much below normal levels** and Clayton Lake had **record low levels**. Interesting enough that the Fort Kent well stayed at near **normal** levels for July.

In regards to Drought monitoring, the drought expanded across the region during the first week of July with **Abnormally Dry** expanding across northeast and Washington County. The **Moderate Drought** expanded into the Maine Central Highlands, Penobscot Valley down into Hancock, with SW Piscataquis and SW Penobscot County remaining in **Severe Drought** Category.

However, by the last week of July, conditions improved significantly, thanks to some beneficial rainfall. The Abnormally Dry was shaved back to the west with SE Aroostook and all of Washington County, coastal Hancock County improving to the **Normal** category. Portions of the Maine Central Highlands, which includes central Penobscot County improved from **Moderate** to **Abnormally Dry**, including southern Penobscot and interior Hancock County. The rest of Piscataquis County was in **Moderate Drought**.

July 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	1.73	3.88	-2.15	NA	NA	NA	NA
Caribou	2.94	4.23	-1.29	0.0	0.0	0	0
*Millinocket	4.72	4.16	+0.56	NA	NA	NA	NA
**Bangor	7.67	4.51	+3.16	0.0	0	0.0	0
Houlton	3.96	3.63	+0.33	NA	NA	NA	NA

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

**July 2021 was the wettest July on record for Bangor.

July 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	751 - 1780	962	0.66	Normal	1341	70
St. John River at Fort Kent	3890 – 8590	3120	0.61	Much Below Normal	5929	94
Aroostook River at Washburn	746 - 1660	598	0.42	Below Normal	1654	90
Narraguagus River at Cherryfield	99.2 – 214	181	0.92	Normal	227	73
E Br Penobscot River at Grindstone	821 - 1540	585	0.81	Much Below Normal	837	118
Mattawamkeag nr Mattawamkeag	468 – 1450	749	0.61	Normal	1418	86
Piscataquis River nr Dover-Foxcroft	96.8 – 289	33.2	0.13	Low	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	22.70 – 19.80	22.17	0.47	Normal	31
Crooked Road	NA	NA	NA	NA	NA
Hadley Lakes	5.58 – 4.83	5.40	0.18	Normal	35
Kenduskeag	23.40 – 21.90	22.90	0.30	Normal	43
Calais	3.45 – 1.59	1.35	-1.16	Above Normal	21
Millinocket	9.84 – 8.69	10.30	1.06	Much Below Normal	27
Clayton Lake	15.70 – 15.00	16.68	1.38	Low	42
Fort Kent	9.87 – 7.40	9.48	0.85	Normal	43

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

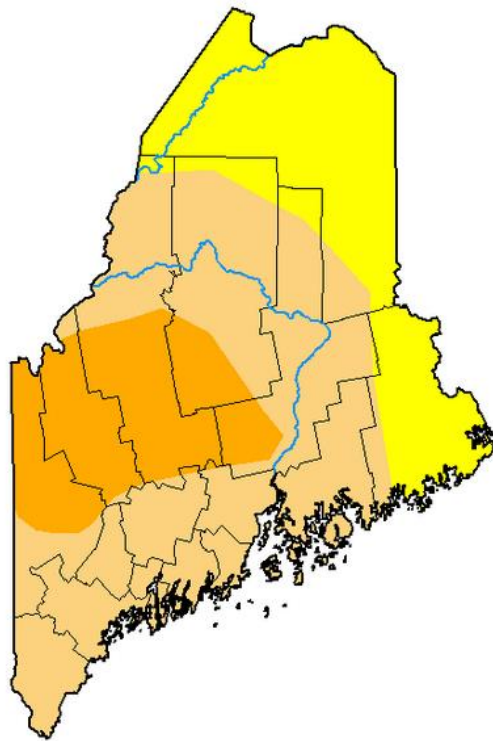
**Non-Routine Hydrologic Products
July 2021
WFO Caribou, ME**

WMO Identifier	Date	Issuance	Name of Product
PWMFLSCAR	7/4	1019Z	Issuance of Urban and Small Stream Advisory
PWMFLSCAR	7/4	1329Z	Continuation of Urban and Small Stream Advisory
PWMFLSCAR	7/9	2044Z	Issuance of Flood Advisory
PWMFLSCAR	7/9	2317Z	Continued Flood Advisory
PWMFLSCAR	7/10	0113Z	Expiration of the Flood Advisory
PWMFFWCAR	7/9	2228Z	Issuance of Flash Flood Warning
PWMFFSCAR	7/10	0001Z	Continuation of Flash Flood Warning
PWMFFSCAR	7/10	0114Z	Cancellation of Flash Flood Warning
PWMFLSCAR	7/10	0020Z	Issuance of Flood Advisory
PWMFLSCAR	7/10	0317Z	Expiration of the Flood Advisory

Drought Conditions for July 2021

U.S. Drought Monitor
Maine

July 6, 2021
(Released Thursday, Jul. 8, 2021)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	70.44	20.85	0.00	0.00
Last Week <i>06-29-2021</i>	0.00	100.00	70.44	20.85	0.00	0.00
3 Months Ago <i>04-06-2021</i>	86.33	13.67	0.00	0.00	0.00	0.00
Start of Calendar Year <i>12-29-2020</i>	91.54	8.46	0.00	0.00	0.00	0.00
Start of Water Year <i>09-29-2020</i>	0.00	100.00	100.00	83.86	7.28	0.00
One Year Ago <i>07-07-2020</i>	6.60	93.40	80.44	8.40	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>

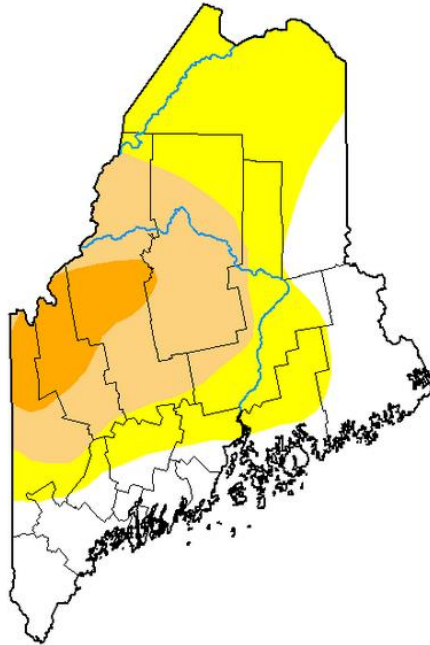
Author:

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National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor
Maine



July 27, 2021

(Released Thursday, Jul. 29, 2021)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	28.33	71.67	32.72	8.42	0.00	0.00
Last Week 07-20-2021	25.19	74.81	37.47	9.00	0.00	0.00
3 Months Ago 04-27-2021	44.34	55.66	0.00	0.00	0.00	0.00
Start of Calendar Year 12-29-2020	91.54	8.46	0.00	0.00	0.00	0.00
Start of Water Year 09-29-2020	0.00	100.00	100.00	83.86	7.28	0.00
One Year Ago 07-28-2020	10.78	89.22	77.76	6.33	0.00	0.00

Intensity:

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

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droughtmonitor.unl.edu