

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
March 2022

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

SIGNATURE
James Sinko, HPM

DATE
April 16, 2022

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 2022

March ended with temperatures that ranged from near 1 degree below average in the St. John Valley to 2-3 degrees above normal from Houlton south to Bangor including the Downeast coast. Similar to February, there were frequent alternating spells of both well above average to well below average temperatures. In Caribou, temperatures ranged from a low of -9°F on the 1st and 4th to a high of 47°F on the 17th and 18th. In Bangor, temperatures this past March ranged from a low of -5°F on the 5th to a high of 66°F on the 18th. No daily temperature records were established at any of the long term climate sites in March. The cold spot for the month was -27°F at Masardis.

Frenchville's average monthly temperature was 23.7° which was 0.8° below normal for the month. Caribou's average monthly temperature was 25.5°, which was 0.5° above normal. Houlton's average monthly temperature was 28.1°, which was 2.6° above normal. Millinocket average monthly temperature was 29.8°, which was 2.2° above average. Lastly, Bangor's average monthly temperature was 33.1°, which was 2.5° above normal for the month.

The North Atlantic Oscillation (NAO) monthly mean was +0.77 standard deviation with the Pacific North American Pattern (PNA) monthly mean around +0.13 standard deviation. This within the La Nina regime resulted in liquid precipitation for the month of March ranging from 90-150% of average across the North with locally 150-200% of average in Northern Somerset county and Northwest Piscataquis county. In the Katahdin Region south, precipitation ranged from 50 to 90 percent of normal. Snowfall was above average across far Northern Maine from the Presque Isle area northward and below average to the south including all of the Downeast region. In Caribou, a total of 26.2 inches was observed, which was 4.8 inches above average. In Bangor, only 5 inches was observed, which was 10.2 inches below average. The month featured frequent snow events across the far north, and more rain than snow across

the south. The heaviest snowfall of the month occurred on the 12th when 6.2 inches of snow was observed in Caribou, but some locations in the North Woods observed over 10 inches of snow. Snow depth on the 1st ranged from 15 to 25 inches across Northern Areas with local amounts of 30 to 40 inches across the higher terrain to the west of Route 11. In Bangor and along the coast, the snow depth ranged from 2 to 6 inches with the lowest amounts along the immediate coast. By the end of the month, the snow depth ranged from 15 to 30 inches across the north with 3 feet on the ground in Allagash, and 40+ inches across the higher elevations west of Route 11. Most of the snow in Bangor and along the coast melted out during the first week to ten days of the month.

Streamflows across central and southern areas were above normal to much above normal levels thanks to rain, warmth and melting snow. Across the north the river ice continues to remain thick with normal flows. Thick sheet ice filled both the Aroostook River & St. John River's with thickness averaging 18 to 30 inches with isolated thicker ice in the beginning of the month. This ice began to slowly decay by mid-month and began to see openings and breaking by the end of the month on edges with no ice jams or movement. Ice began moving on the Mattawamkeag and jammed in the town of Mattawamkeag on the temporary Route 2 Bridge on the 20th-21st. This jam flushed out into the opening Penobscot on March 22nd. At the beginning of the month ice broke up on the Penobscot with significant rot below the Milford Dam. Ice also rotted along the Kenduskeag Stream resulting in ice shifting downstream. There was ice rot in the beginning of the month on the Narraguagus and St. Croix rivers. All of the Central and Downeast rivers were ice free by late month.

Wells across southern areas including the Bangor area to Downeast were running above normal to much above north. Areas in the Northern Highlands to Northern Maine were running normal for the month.

In regards to Drought monitoring, we continued to hold mostly the status quo from the beginning of the month to the end of the month given the winter conditions and frozen grounds. Much of Eastern & Northeastern Maine remained out of drought conditions. Moosehead Lakes region into the North Woods and headwaters of the St. John River remained at Abnormally Dry (D0) / **Moderate Drought (D1)**, there remains a very small **Severe (D2)** area in Northern Somerset County along the Quebec border. By the end of the month given the improving groundwater numbers and deep snowpack expected to melt **D1** was removed in much of the North Woods except far northern Somerset County. This has been classified as a long-term impacts drought which is typically greater than 6 months impacting both hydrology and ecology.

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	1.76	1.47	+0.29	NA	NA	NA	NA
Fort Kent	2.80	2.75	+0.05	20.5	19.0	+1.5	37
Caribou	4.00	2.77	+1.23	26.2	21.4	+4.8	23
Houlton	2.84	2.67	+1.05	NA	NA	NA	NA
*Millinocket	3.38	2.97	+0.41	8.5	NA	NA	15
Bangor	3.24	3.22	+0.02	5.0	15.2	-10.2	7
Robbinston	3.82	4.82	-1.00	7.0	18.9	-11.9	6

*Millinocket snowfall measured at wastewater treatment plant, not the ASOS site. No departure data is available.

March Streamflows for Selected Rivers

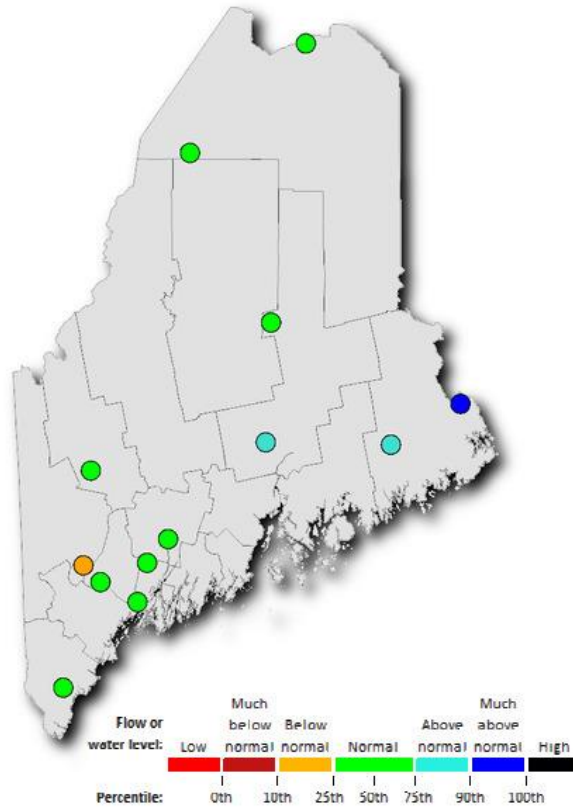
River	Normal Flow (cfs)	Monthly Mean Flow (cfs)	Monthly Mean (in)	Percentile Class	Drainage (mi²)	Years of Record
St. John River at Ninemile Bridge	NA	NA	NA	NA	1341	70
St. John River at Fort Kent	1710 – 4880	4220	0.82	Normal	5929	95
Aroostook River at Washburn	NA	NA	NA	NA	1654	90
Narraguagus River at Cherryfield	480 – 943	927	4.71	Normal	227	74
E Br Penobscot River at Grindstone	NA	NA	NA	NA	837	118
Mattawamkeag nr Mattawamkeag	1070 – 3000	5450	4.43	Much Above Normal	1418	87
Piscataquis River nr Dover-Foxcroft	281 – 774	1060	4.10	Above Normal	298	119

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	NA	NA	NA	NA	30
Crooked Road	NA	NA	NA	NA	15
Hadley Lakes	4.92 – 4.15	3.78	-0.81	Above Normal	36
Kenduskeag	22.30 – 19.40	18.95	-1.95	Above Normal	43
Calais	1.52 – 0.50	-0.44	-1.35	Much Above Normal	22
Millinocket	10.40 – 9.50	10.01	0.08	Normal	28
Clayton Lake	14.80 – 13.70	14.13	-0.07	Normal	43
Fort Kent	12.50 – 9.96	11.37	0.47	Normal	44



Groundwater Conditions
March 2022



Flow or Water Level	Percentile Range	Explanation
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.

**Non-Routine Hydrologic Products
March 2022
WFO Caribou, ME**

WMO Identifier	Date	Issuance	Name of Product
NONE	N/A	N/A	N/A

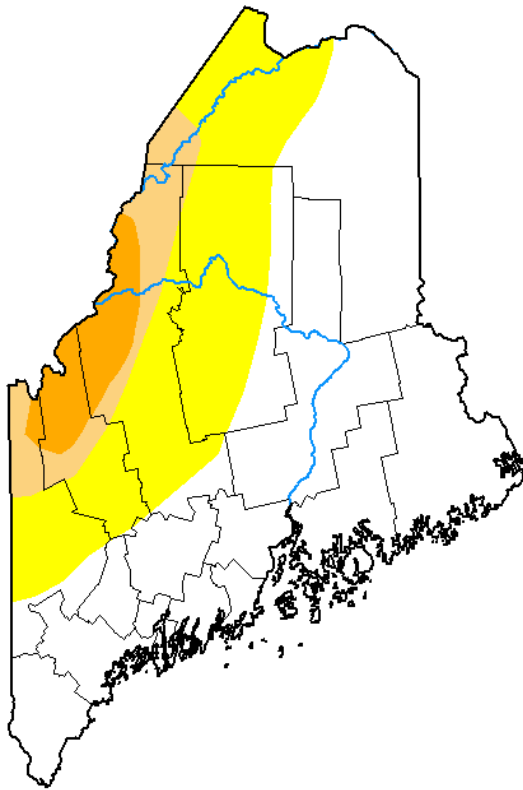
Drought Conditions for March 2022

U.S. Drought Monitor Maine

March 1, 2022

(Released Thursday, Mar. 3, 2022)

Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	60.22	39.78	11.82	5.32	0.00	0.00
Last Week 02-22-2022	59.66	40.34	11.82	5.32	0.00	0.00
3 Months Ago 11-30-2021	72.42	27.58	11.82	5.32	0.00	0.00
Start of Calendar Year 01-04-2022	72.42	27.58	11.82	5.32	0.00	0.00
Start of Water Year 09-28-2021	66.54	33.46	15.50	4.85	0.00	0.00
One Year Ago 03-02-2021	92.01	7.99	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:

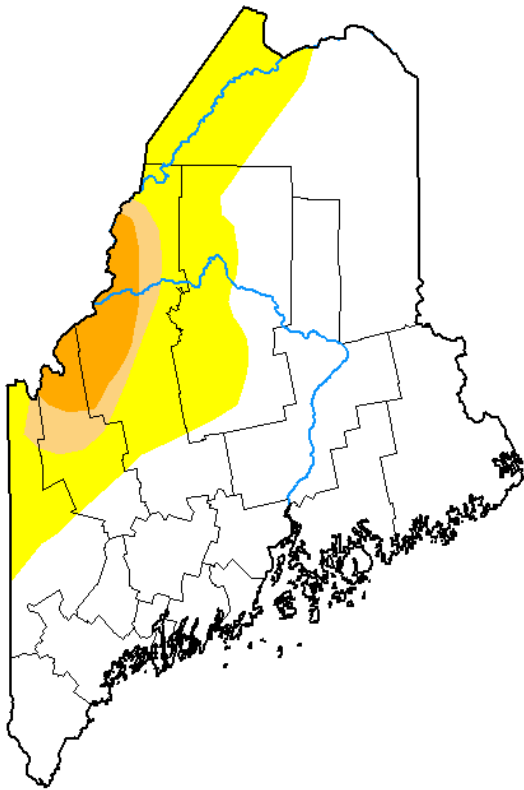
Brad Rippey
U.S. Department of Agriculture



droughtmonitor.unl.edu

U.S. Drought Monitor Maine

March 29, 2022
(Released Thursday, Mar. 31, 2022)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	69.40	30.60	7.46	4.22	0.00	0.00
Last Week 03-22-2022	64.43	35.57	7.46	4.22	0.00	0.00
3 Months Ago 12-28-2021	72.42	27.58	11.82	5.32	0.00	0.00
Start of Calendar Year 01-04-2022	72.42	27.58	11.82	5.32	0.00	0.00
Start of Water Year 09-28-2021	66.54	33.46	15.50	4.85	0.00	0.00
One Year Ago 03-30-2021	86.32	13.68	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