

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

WFO Caribou, Maine

REPORT FOR:
MONTH YEAR

May 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

June 15, 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.

May 2022

May in Northern and Eastern Maine finished above average for temperature with precipitation more variable and ranged from well below average across the Downeast region to well above average in the St. John Valley. Temperatures across the region ranged from 1.5 to 2.5 degrees above average. Temperatures alternated from mostly below average the first week of the month to well above average for the 2nd week of the month. During the 2nd half of the month temperatures varied from below average to above average, but were not as extreme as the first half of the month.

<i>Town/City</i>	<i>Avg Monthly Temperature (°F)</i>	<i>Normal Monthly Temperature (°F)</i>	<i>Departure from Normal (°F)</i>
Frenchville	53.5	51.7	+1.8
Fort Kent	52.0	49.4	+2.6
Caribou	54.4	52.2	+2.2
Houlton	53.8	51.2	+2.6
Millinocket	55.8	53.2	+2.6
Greenville	55.3	51.4	+3.9
Bangor	56.7	54.5	+2.2
Robbinston	53.9	51.7	+2.2

The North Atlantic Oscillation (NAO) monthly mean was +0.71 standard deviation with the Pacific North American Pattern (PNA) monthly mean around -0.83 standard deviation. This within a La Nina regime resulted in liquid precipitation for the month of May ranging from 25-65% of average across Downeast areas to as much as 200 percent of average in the St. John Valley. The first 2 week so of the month were very dry, but the 2nd half of the month featured more frequent showers and thunderstorms.

The first convective Flood Advisory for the year was issued on May 15th. The first Severe Thunderstorm Warnings of the season were issued over the weekend of May 21-22 with the first Flash Flood Warning for the year being issued on May 28th. The most significant weather event of the month occurred on the morning of the 28th when Heavy Rain and Thunderstorms occurred over the same area north of Caribou into the St. John Valley. Heavy rain occurred along a line from Westmanland to Stockholm to Cyr Plantation and Van Buren. This heavy rain event was preceded by rain with 3-Day totals of 2 to 5 inches with isolated amounts of 4-7 inches in this area north of Caribou. There was significant stream flooding on St. Mary's Brook Road in Van Buren. There was flooding of McClusky Brook on the Little Madawaska Road in Westmanland. The most significant flood damage was of Route 1 in Cyr Plantation between Abel Cyr Road & Vaillancourt Road where a 7 foot section of the road collapsed and washed away. Maine Department of Transportation investigation confirms it was due to flash flooding and a beaver dam that broke loose. Sharing the following photos with the written permission of Christie Belanger. Thank you Christie!





Streamflows at the beginning of the month were quickly falling off coming out of the Ice Out in April and falling well below average. Looking at the month as a whole we averaged below normal to much below normal across the area with the exception of the St. John which averaged as normal for the month. Although we did have some spikes on the larger waterways from thunderstorm runoff the high water activity mainly affected flash flooding prone smaller streams, creeks and rivers.

Groundwater wells for the month continued to average normal across the Greater Bangor area into the Downeast, Baxter & Moosehead Lakes region and much of Aroostook County. Clayton Lake observation showed “Below Normal” suggesting the North Woods groundwater levels are now below normal with no significant amount of rainfall after the snowmelt.

In regards to Drought monitoring, we saw improvement with rainfall to result in the D0 “Abnormally Dry” category being removed in the North Woods except for a portion of Northern Somerset along the Quebec Border and portions of southwest Piscataquis County. The **D1 “Moderate Drought”** was removed completely from the entire County Warning Area. By mid month an area of D0 “Abnormally Dry” was added to the Downeast coast given the lack of precipitation during the first half of the month.

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

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	4.92	3.07	+1.85				
Fort Kent	5.77	3.31	+2.46	0.0	0.1	-0.1	0
Caribou	3.46	3.46	0.00	0.0	0.8	-0.8	0
Houlton	2.15	3.46	-1.31				
*Millinocket	3.87	3.42	+0.45	0.0			0
Bangor	2.11	3.34	-1.23	0.0	0.0	0	0
Robbinston	2.54	4.35	-1.81	0.0	0.0	0	0

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

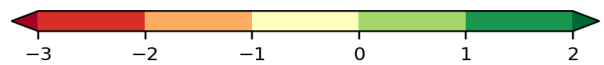
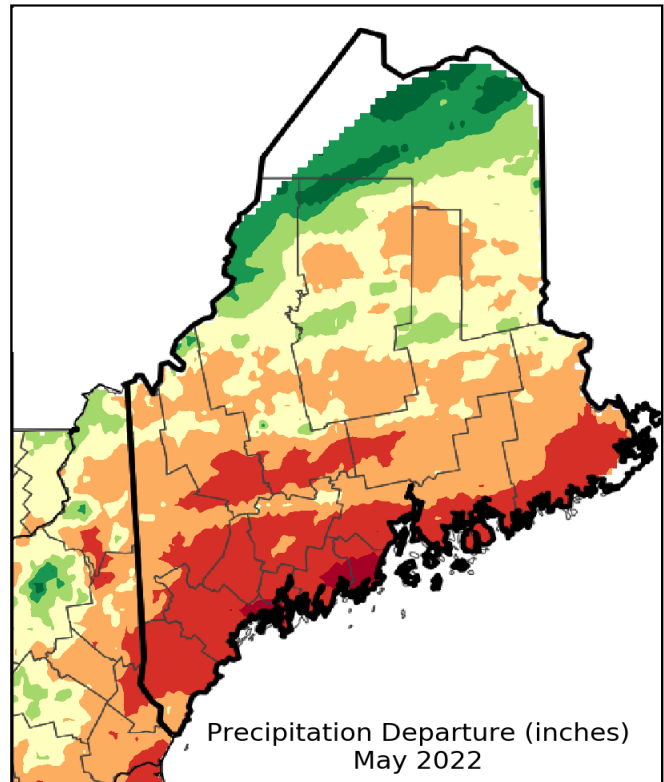
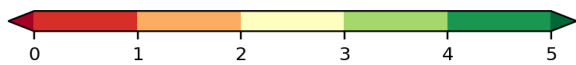
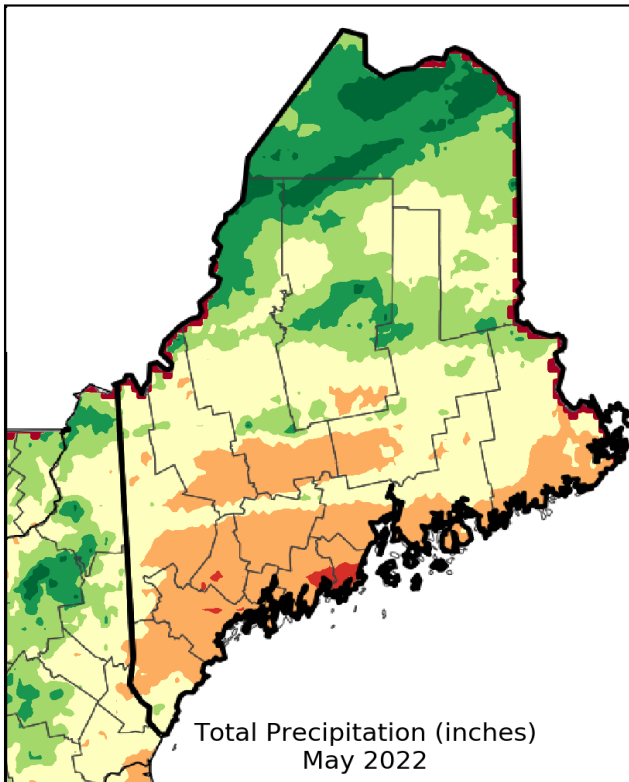


Figure 1: Monthly Precipitation Totals for May 2022

Figure 2: Monthly Precipitation Departures from Normal for May

Source: [Northeast Regional Climate Center](#)

May Streamflows 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	4460 - 8690	5290	4.55	Normal	1341	71
St. John River at Fort Kent	20200 - 42100	26000	5.06	Normal	5929	95
Aroostook River at Washburn	4780 - 9380	4180	2.91	Below Normal	1654	91
Narraguagus River at Cherryfield	423 - 825	374	1.90	Below Normal	227	74
E Br Penobscot River at Grindstone	3020 - 6220	2520	3.47	Below Normal	837	119
Mattawamkeag near Mattawamkeag	3540 - 6710	2690	2.19	Below Normal	1418	87
Piscataquis River near Dover-Foxcroft	690 - 1640	404	1.56	Below Normal	298	119



Surface Water Conditions
May 2022

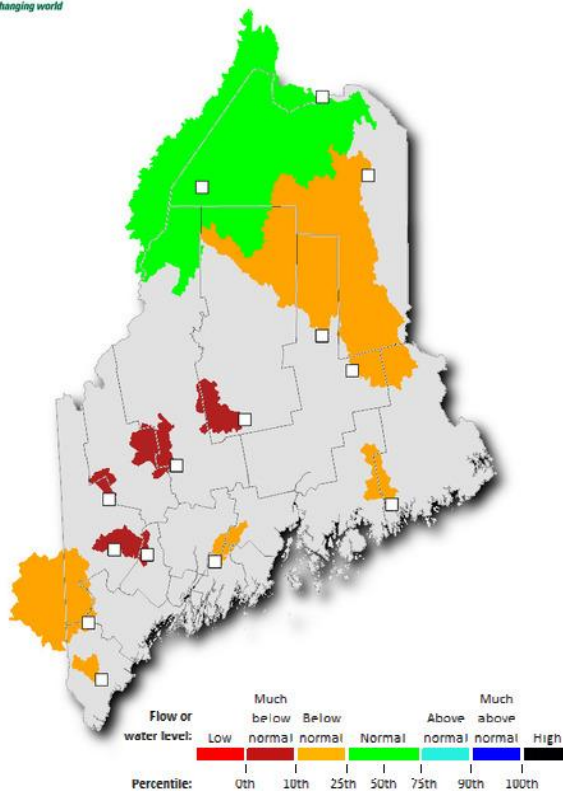


Figure 3: Surface Water Conditions for May 2022
Source: [USGS Monthly Report](#)

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
Hadley Lakes	4.40 - 3.75	3.94	-0.18	Normal	36
Kenduskeag	20.40 - 18.90	20.13	0.53	Normal	44
Calais	1.53 - 0.35	0.64	-0.31	Normal	22
Millinocket	8.55 - 7.19	7.90	0.26	Normal	28
Clayton Lake	13.50 - 12.40	13.82	0.82	Below Normal	43
Fort Kent	6.24 - 3.67	4.41	-0.51	Normal	44



Groundwater Conditions
May 2022

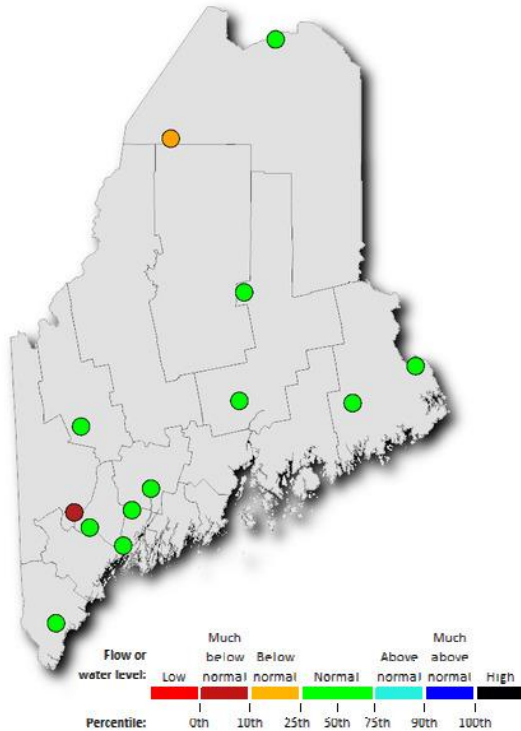


Figure 4: Ground Water Conditions for May 2022
Source: [USGS Monthly Report](#)

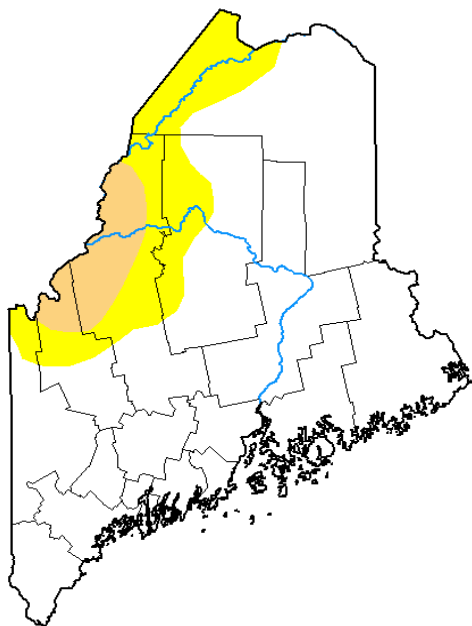
Flow or Water Level	Percentile Range	Explanation
Low	0 th	The monthly mean streamflow or median water level during this month is the lowest ever recorded during the period of record for this site.
Much below normal	0 th to 10 th	The monthly mean streamflow or median water level during this month is less 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
May 2022
WFO Caribou, ME**

WMO Identifier	Office ID	Issued Date & Time	Expire/Canceled Date & Time	Brief Description
PWMFLSCAR	FA.Y 013	5/15/22 2:04AM	5/15/22 4:36AM	T-Storms w/ Heavy Rain in Washington County
PWMFLSCAR	FA.Y 014	5/22/22 12:29PM	5/22/22 2:58PM	T-Storms w/ Heavy Rain in Aroostook County
PWMFLSCAR	FA.Y 015	5/22/22 8:32PM	5/22/22 9:21PM	T-Storms w/ Heavy Rain in Aroostook County
PWMFLSCAR	FA.Y 016	5/28/22 2:40AM	5/28/22 6:55AM	T-Storms w/ Heavy Rain in Piscataquis & Aroostook Counties
PWMFFWCAR	FF.W 001	5/28/22 3:19AM	5/28/22 6:29AM	T-Storms w/ Heavy Rain in Aroostook County producing Flash Flooding
PWMFLSCAR	FA.Y 017	5/28/22 5:50AM	5/28/22 6:56AM	Continued Flooding from Flash Flooding overnight
PWMFLSCAR	FA.Y 018	5/28/22 9:44AM	5/28/22 1:22PM	New reports of continued flooding from overnight flash flooding. Route 1 collapsed.

Drought Conditions for May 2022

U.S. Drought Monitor Maine



May 3, 2022

(Released Thursday, May 5, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	78.57	21.43	5.94	0.00	0.00	0.00
Last Week 04-26-2022	78.57	21.43	5.94	0.00	0.00	0.00
3 Months Ago 02-01-2022	59.66	40.34	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 05-04-2021	45.31	54.69	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>

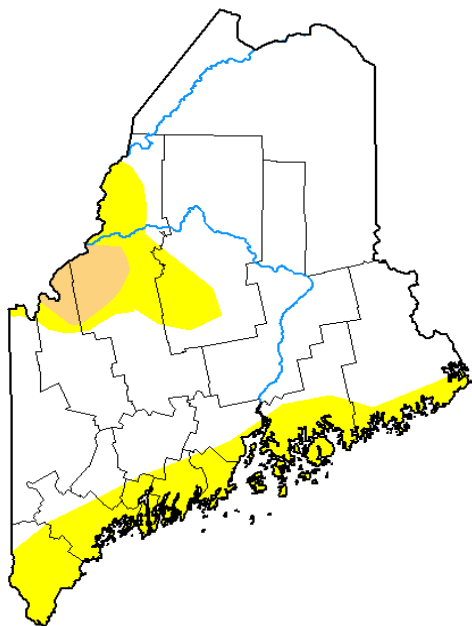
Author:

David Simeral
Western Regional Climate Center



droughtmonitor.unl.edu

U.S. Drought Monitor Maine



May 31, 2022

(Released Thursday, Jun. 2, 2022)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	76.74	23.26	2.90	0.00	0.00	0.00
Last Week 05-24-2022	66.78	33.22	5.31	0.00	0.00	0.00
3 Months Ago 03-01-2022	60.22	39.78	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 06-01-2021	34.65	65.35	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:

Curtis Riganti
National Drought Mitigation Center



droughtmonitor.unl.edu

Drought Classification (Cumulative Percent Area %)

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
5/3/2022	78.57	21.43	5.94	0.00	0.00	0.00	27
5/31/2022	76.74	23.26	2.90	0.00	0.00	0.00	26
Change	-1.83	1.83	-3.04	0.00	0.00	0.00	-1

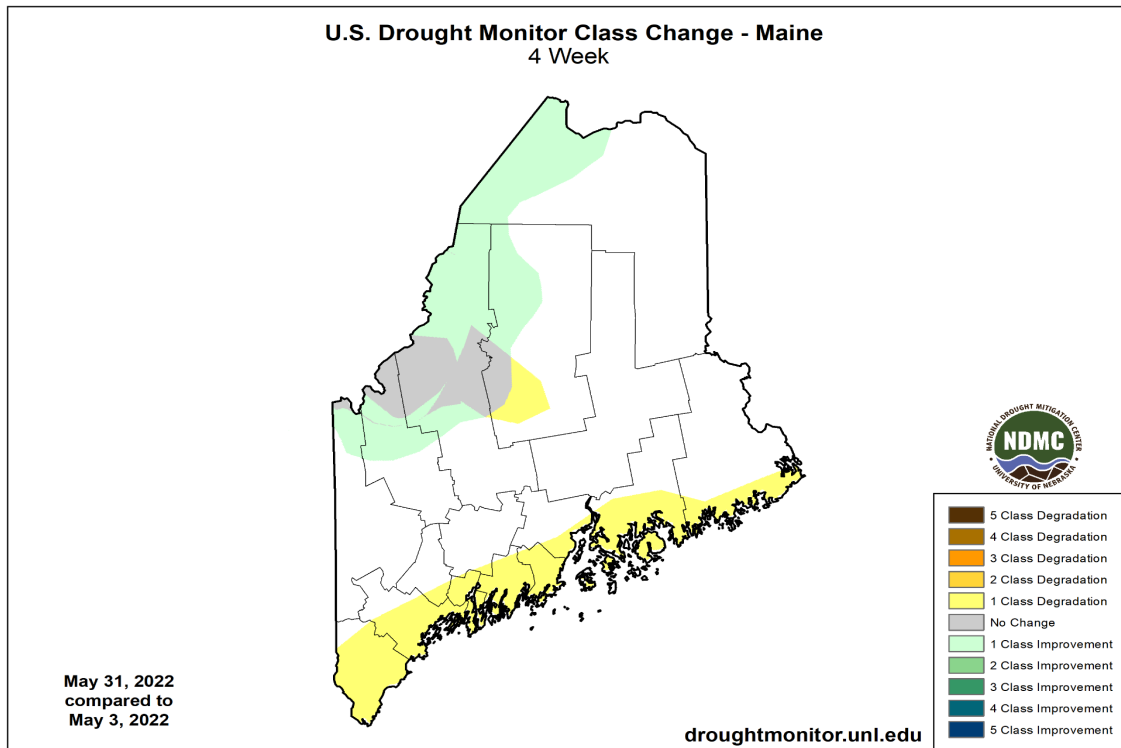


Figure 5-7: U.S. Drought Monitor Drought Classification & Statistics for May
Source: [U.S. Drought Monitor](https://droughtmonitor.unl.edu)