

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 April 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 May 9, 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.

April 2022

April across Northern and Eastern Maine finished slightly above average for temperature, above average for precipitation, and generally below average for snowfall. Temperatures across the region ranged from average across the far North upwards to 1.6 degrees above average for Central and Downeast areas. Cloudy, wet conditions limited temperature extremes across the region this month with only locations from Millinocket and southward experiencing 60+ degree highs after April 10th and only Houlton across the North on April 25th. The coldest morning across most of the entire region was on the morning of the 6th with lows ranging from teens North to lower to mid 20s Downeast.

<i>Town/City</i>	<i>Avg Monthly Temperature (°F)</i>	<i>Normal Monthly Temperature (°F)</i>	<i>Departure from Normal (°F)</i>
Frenchville	37.7	37.7	0.0
Caribou	38.8	38.5	+0.3
Houlton	40.1	38.6	+1.5
Millinocket	41.8	40.4	+1.4
Greenville	39.5	38.0	+1.5
Bangor	44.4	42.8	+1.6
Robbinston	42.7	41.4	+1.3

The North Atlantic Oscillation (NAO) monthly mean was -0.36 standard deviation with the Pacific North American Pattern (PNA) monthly mean around -0.74 standard deviation. This within a strengthening La Nina regime resulted in liquid precipitation for the month of April ranging from 100-140% of average across the area. Snowfall for the month was relatively scant ranging from a trace over Downeast areas upwards to 50 percent of average across the North. The most significant event occurred late in the month on the 28th-29th, and mostly affected higher terrain of North Central, Northeast, and East Central areas with 2 to 5 inches. A few locations, however, like Mars Hill and Jemtland that were under localized bands of heavy snow received upwards of 8 to 10 inches, about the normal complement of April snowfall. Snowpack was only present for Northern portions of the region at

the beginning of the month, and initially gradually melted prior to the precipitation event of the 8th-10th. Melting occurred more rapidly after the 8th, resulting in the subsequent dislodging of Northern river ice with little in the way of significant flooding during the week afterwards. Maximum snowpack at Caribou was 16 inches on the morning of the 1st with far Northern Woods locations still around 30 inches, afterwards Caribou down to trace on the ground by the 12th. The monthly average snowpack at Caribou of 2.9 inches was below the 1991-2020 30 year mean of 4.1 inches, despite the current seasonal snowfall total of 123.1 inches, which is nearly 5 inches above the 1991-2020 30 year average.

Streamflows were above average at the beginning of the month in Downeast & Central regions as snow melt at the headwaters combined with precipitation kept rivers running high. These rivers returned to normal levels by the end of the month which resulted in monthly average streamflow around average. We did see a heavy rain event in Downeast areas on April 19th that prompted Flood Advisories and a Flood Warning. Rainfall of 2.5 to 4 inches of rain in Hancock & Washington counties resulted in spikes on the Narraguagus and other smaller streams/rivers in Downeast areas. Streamflows across the north were above normal as we started the month with rising rivers with ice remaining on the Allagash, Big Black, St. John & Aroostook rivers. This ice was significantly rotting in the beginning of the month and by mid month we began to see significant movement. Ice out process took place between the 10th and 16th starting with the Aroostook River.

On the 10th ice began to shift and move downstream from the headwaters to Ashland where a small jam developed. This jam punched south and created a significant jam in the town of Wade. This caused flooding of the Gardner Creek Camp Road in the town of Wade blocking access to these camps as the jam developed to be approx 5-7 miles long. We also saw movement of the ice downstream creating minor jams in Crouseville to Presque Isle mainly in the Rum Rapids area. This caused water to backup and approach Route 164 in the low spots but thankfully did not flood this year. The jam in Wade broke loose on April 11th with temperatures in the upper 40s with sunny skies. This sent 5-9 miles worth of ice downstream into Presque Isle and into the ice stuck above the Caribou dam. Monday, April 11th the ice went over the Caribou Dam around 2:50pm with the incredible pressure upstream pushing on the ice. All this ice did make it into Fort Fairfield where much of the river was open to the Route 1A bridge in town. The ice did briefly jam that night trying to push into New Brunswick and over Tinker Dam which caused minor flooding on Russell Road in Fort Fairfield. This water quickly dropped when the ice went over Tinker Dam and the Aroostook River became ice out. The remaining of the month the river slowly fell to normal levels by the end of the month given the runoff and a rain event towards the end of month.

The St. John River began to see movement on April 12th and 13th as a large jam developed in the Allagash on both the St. John & Allagash Rivers. Ice upstream had cleared out to the headwaters minus the rotting ice in the Big Black River which never posed any threats. The Allagash Jam did flood portions of Route 161 in town and flood waters did impact properties including one seasonal camp seeing flood waters enter the camp. At one point the jam in the Allagash was approx 9.5 miles long from St. Francis to Allagash Dickey Bridge. This also caused some backwater issues on the Little Black River too where ice blocked the discharge causing backwater flooding of properties but thankfully didn't flood any homes. At the same time minor flooding was occurring in the farm fields between St. David and Lille due to a jam that developed near Grand Isle & Lille. At 0225z on April 14th the large jam in the Allagash broke and the ice from the Allagash River dislodged. This once again caused briefly minor flooding and pushed ice onto Route 161 in town. It was estimated that 5-7 feet worth of water was behind this jam based on the DICM1 gage readings and pushed downstream when the ice broke. The ice began to get stuck between St. David & Van Buren caused additional minor flooding mainly impacting

low lying farm fields. On the morning of the 16th the ice pushed downstream to begin impacting Van Buren to Hamlin causing minor flooding of low lying areas near the river. By midday the ice dislodged and went over Grand Falls in New Brunswick which allowed the St. John to become ice free. The St. John River remained mainly above normal through the end of the month when it finally dropped to normal levels.

Groundwater wells for the month averaged normal across the Greater Bangor area into the North Woods and much of Aroostook County. Wells averaged above normal in Central areas from Millinocket to Calais.

In regards to Drought monitoring, we saw improvement with significant snowmelt being absorbed into the ground across the North Woods in addition to rainfall. Much of Eastern & Northeastern Maine remained status quo 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)** and **Severe (D2)** drought improved to just an area of **Moderate Drought (D1)** in Northern Somerset county along the Quebec border. 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	1.66	2.35	-0.69				
Fort Kent	2.83	3.17	-0.34	0.5	6.6	-6.1	23
Caribou	3.47	2.99	+0.48	4.1	8.3	-4.2	16
Houlton	3.64	2.94	+0.70				
*Millinocket	3.48	3.51	-0.03	Trace			0
Bangor	4.96	3.61	+1.35	Trace	3.7	-3.7	0
Robbinston	7.43	4.39	+3.04	0.6	6.0	-5.4	Trace

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

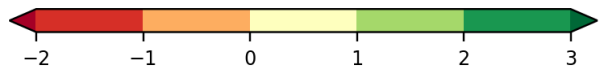
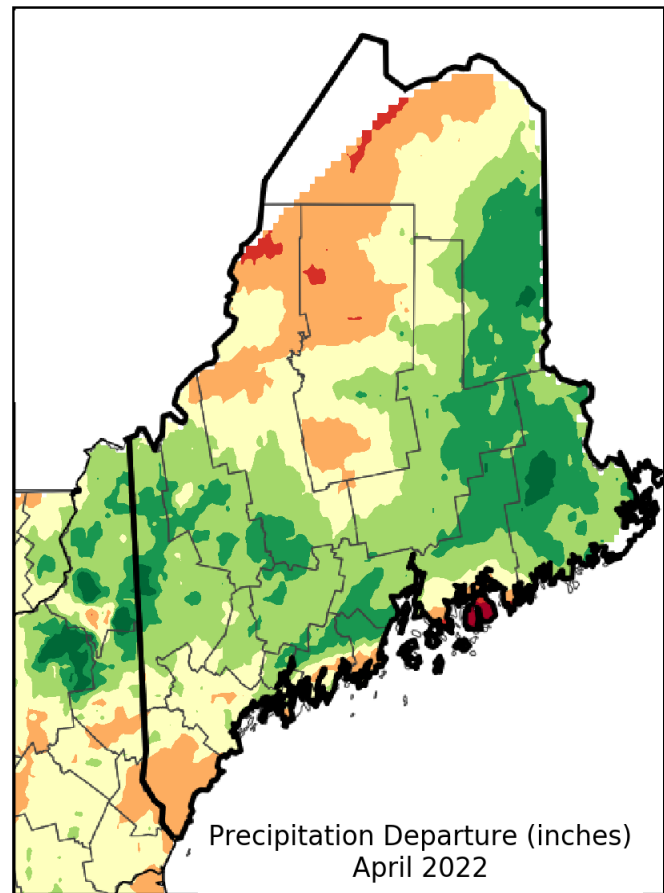
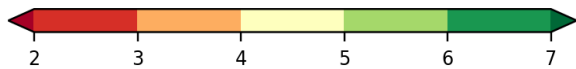
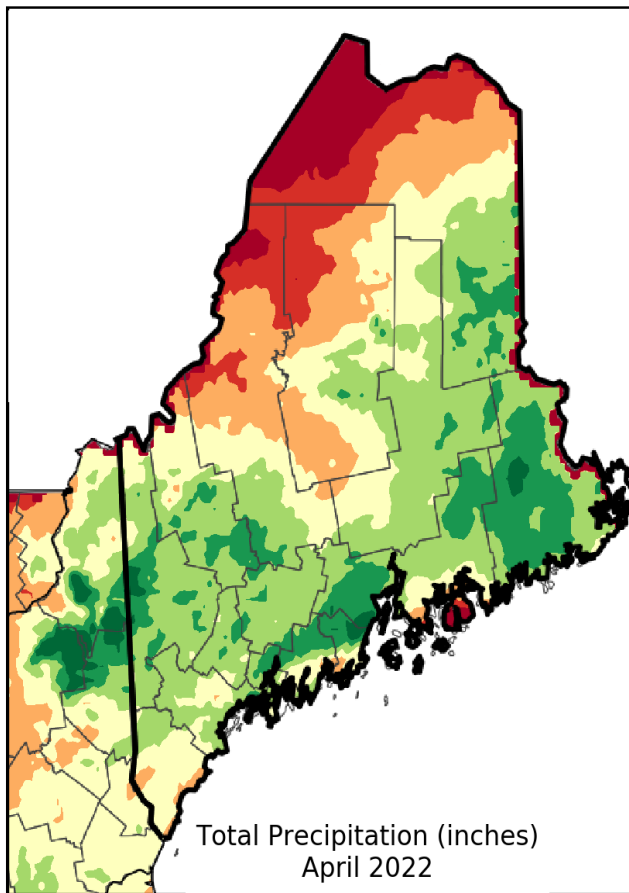


Figure 1: Monthly Precipitation Totals for April 2022

Figure 2: Monthly Precipitation Departures from Normal for April

Source: [Northeast Regional Climate Center](#)

April 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					1341	70
St. John River at Fort Kent	18900 – 35600	36000	6.77	Above Normal	5929	95
Aroostook River at Washburn					1654	90
Narraguagus River at Cherryfield	924 – 1500	1230	6.05	Normal	227	74
E Br Penobscot River at Grindstone					837	118
Mattawamkeag nr Mattawamkeag	7030 – 10600	9410	7.40	Normal	1418	87
Piscataquis River nr Dover-Foxcroft	1630 – 2540	1900	7.11	Normal	298	119



Surface Water Conditions
April 2022

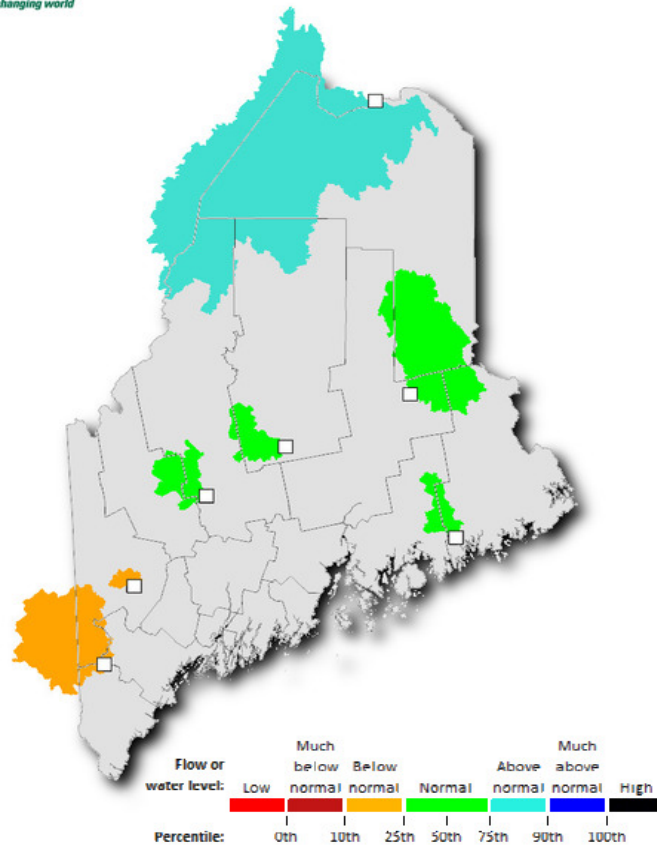


Figure 3: Surface Water Conditions for April 2022
Source: [USGS Monthly Report](#)

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	4.18 – 3.45	3.61	-0.24	Normal	36
Kenduskeag	19.20 – 17.80	18.31	0.00	Normal	44
Calais	0.63 – -0.25	-0.67	-0.91	Above Normal	22
Millinocket	9.34 – 7.47	7.46	-1.09	Above Normal	28
Clayton Lake	12.60 – 10.50	11.31	-0.30	Normal	43
Fort Kent	10.50 – 6.52	8.23	-0.21	Normal	44



Groundwater Conditions
April 2022

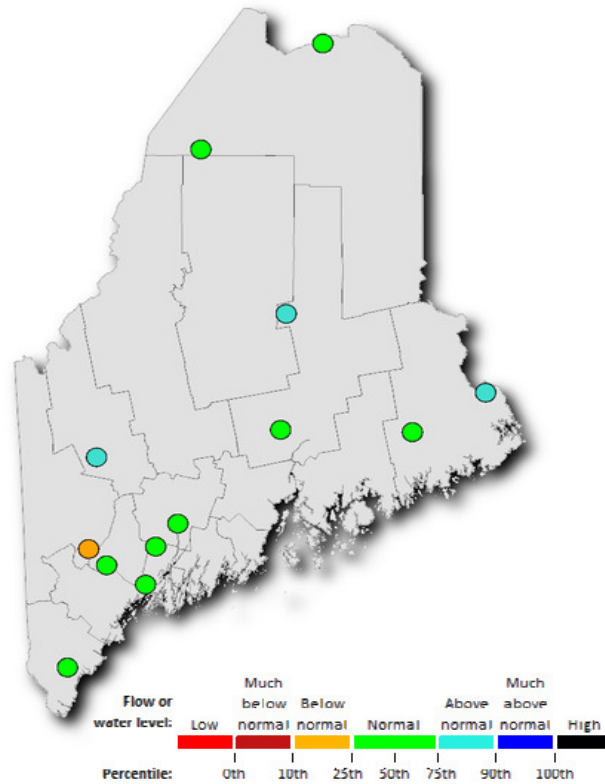


Figure 4: Ground Water Conditions for April 2022
Source: [USGS Monthly Report](#)

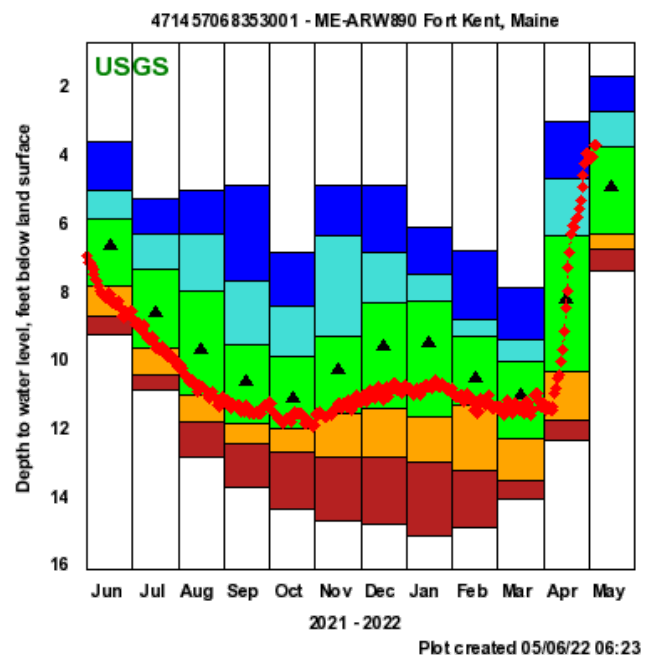
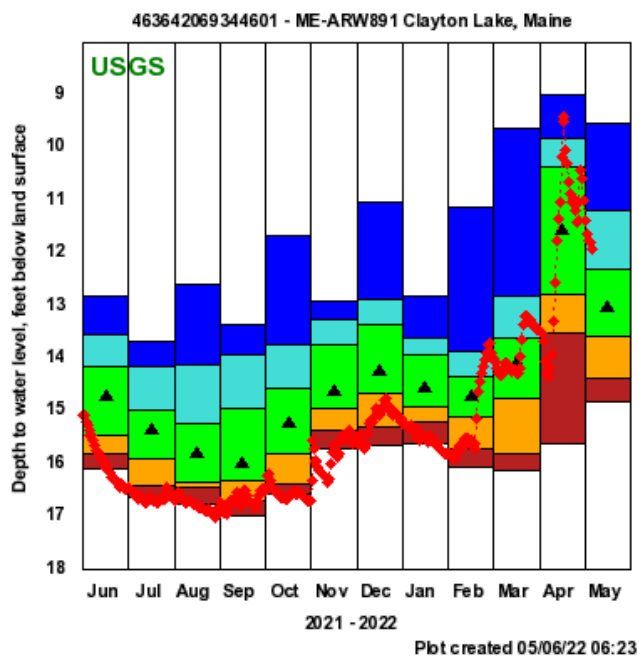
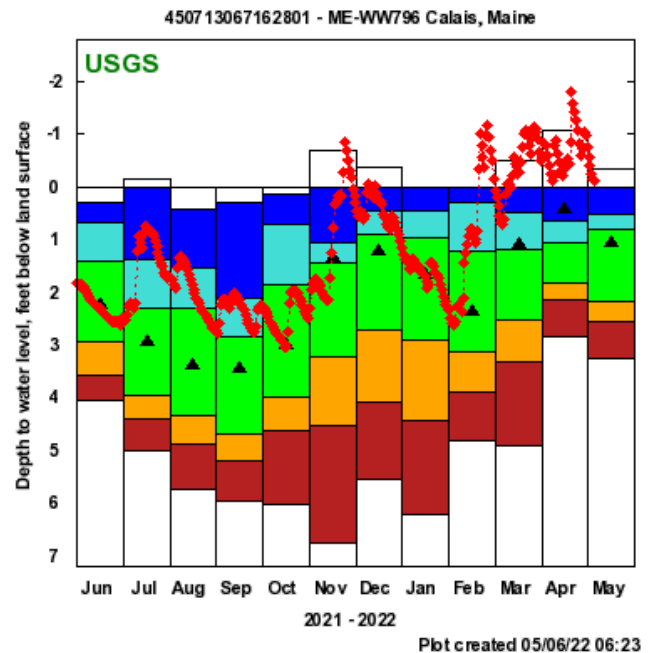
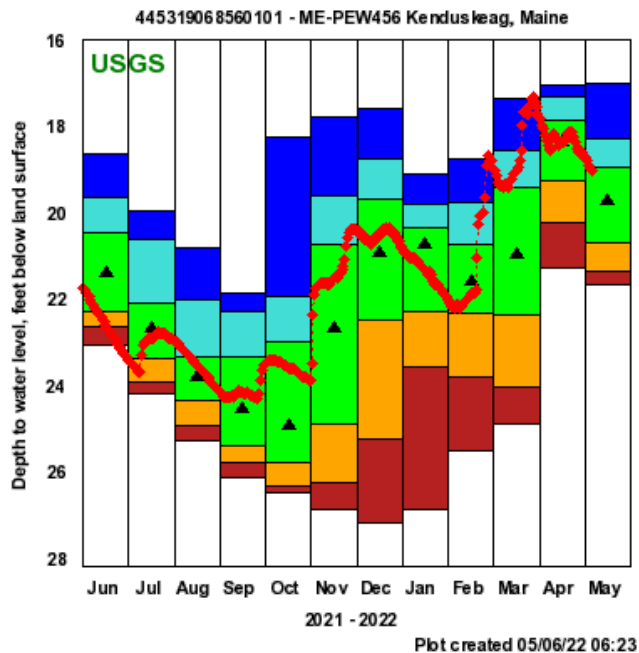


Figure 5: USGS Groundwater Stations in Eastern/Northern Maine
Source: [USGS](https://www.usgs.gov/)

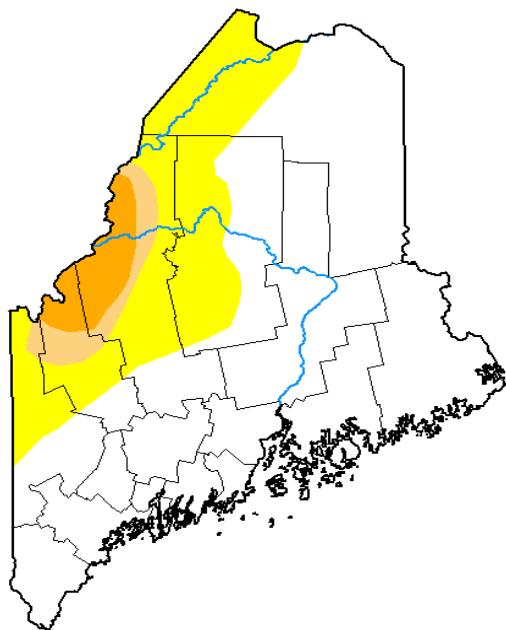
Flow or Water Level	Percentile Range	Explanation
Low	0 th	The monthly mean streamflow or median water level during this month is the lowest ever recorded during the period of record for this site.
Much below normal	0 th to 10 th	The monthly mean streamflow or median water level during this month is less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

WMO Identifier	Office ID	Issued Date & Time	Expire/Canceled Date & Time	Brief Description
PWMFLSCAR	FA.Y 001	4/10/22 0509z	N/A	Ice Jam in Wade w/ Minor Flooding
PWMFLSCAR	FA.Y 002	4/10/22 1547z	4/11/22 1705z	Ice Jam in Wade w/ Minor Flooding
PWMFLSCAR	FA.Y 003	4/10/22 1904z	4/11/22 1831z	Ice Jam in Crouseville
PWMFLSCAR	FA.Y 004	4/11/22 2303z	4/12/22 1406z	Ice Jam w/ Minor Flooding in Fort Fairfield
PWMFLWCAR	FA.W 001	4/12/22 0230z	4/13/22 0403z	Ice Jam w/ Flooding on Route 161 Allagash
PWMFLSCAR	FA.Y 005	4/13/22 0410z	4/13/22 1319z	Ice Jam w/ Minor Flooding in Allagash
PWMFLSCAR	FA.Y 006	4/13/22 1201z	4/14/22 1535z	Ice Jam w/ Minor Flooding Grand Isle to Lille
PWMFLSCAR	FA.Y 007	4/13/22 0919z	4/15/22 0225z	Ice Jam in Allagash (Replaced FA.Y 005)
PWMFLSCAR	FA.Y 008	4/13/22 1816z	4/15/22 0559z	Minor Flooding Little Black River in Allagash
PWMFLWCAR	FA.W 002	4/14/22 0225z	04/15/22 1129z	Gage Spike as Ice Jam in Allagash Released
PWMFLSCAR	FA.Y 009	4/14/22 1635z	04/16/22 1600z	Ice Jam Flooding St. David to Van Buren
PWMFLSCAR	FA.Y 010	4/16/22 1207z	4/16/22 1856z	Ice Jam Flooding Van Buren to Hamlin
PWMFLSCAR	FA.Y 011	4/19/22 1848z	4/19/22 2245z	Excessive rainfall portions of Downeast
PWMFLWCAR	FA.W 003	4/19/22 1955z	4/19/22 2252z	Excessive rainfall portions of Downeast
PWMFLSCAR	FA.Y 012	4/19/22 2252z	4/20/22 0145z	Excessive rainfall portions of Downeast

Drought Conditions for April 2022

U.S. Drought Monitor Maine



April 5, 2022

(Released Thursday, Apr. 7, 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 03-29-2022	69.40	30.60	7.46	4.22	0.00	0.00
3 Months Ago 01-04-2022	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 04-06-2021	86.33	13.67	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>

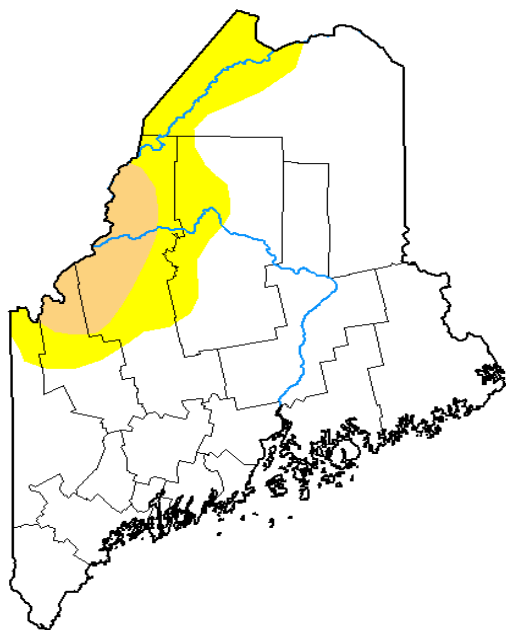
Author:

Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

U.S. Drought Monitor Maine



April 26, 2022

(Released Thursday, Apr. 28, 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 04-19-2022	78.57	21.43	5.94	0.00	0.00	0.00
3 Months Ago 01-25-2022	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 04-27-2021	44.34	55.66	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:

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U.S. Department of Agriculture



droughtmonitor.unl.edu

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
4/5/2022	69.40	30.60	7.46	4.22	0.00	0.00	42
4/26/2022	78.57	21.43	5.94	0.00	0.00	0.00	27
Change	9.17	-9.17	-1.52	-4.22	0.00	0.00	-15

U.S. Drought Monitor Class Change - Maine
4 Week

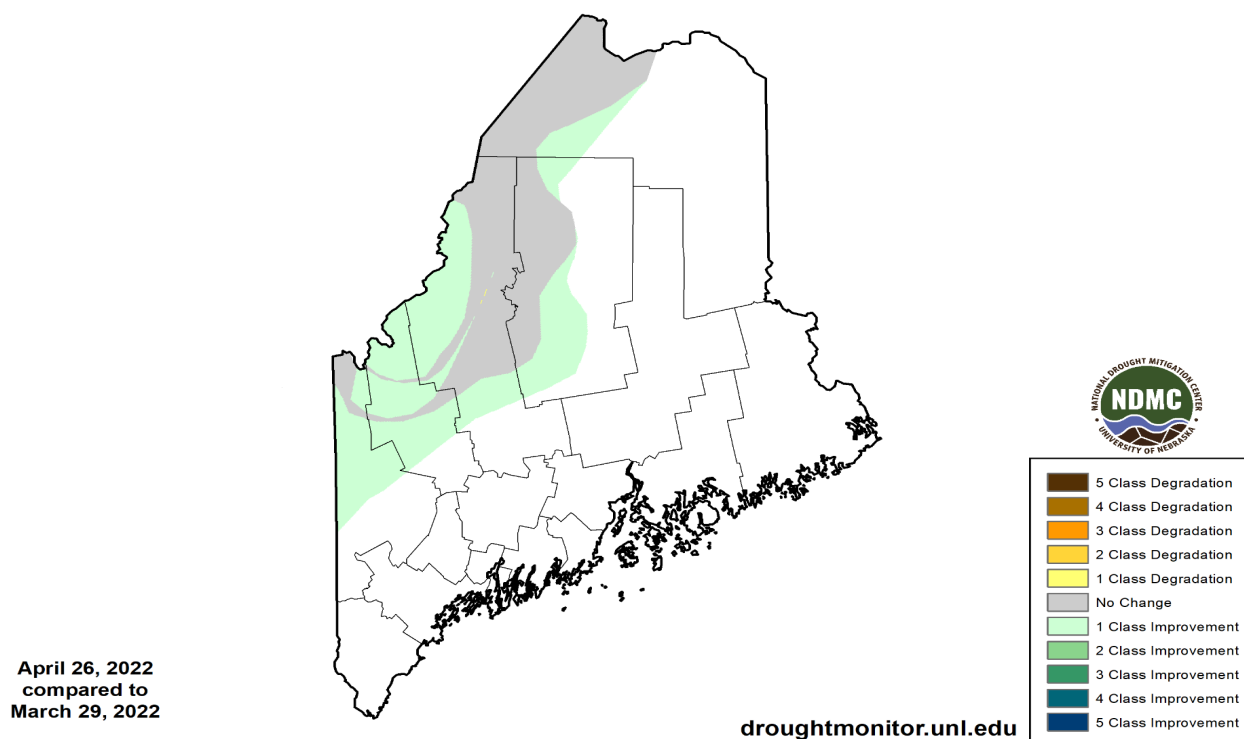


Figure 6: U.S. Drought Monitor Drought Classification & Statistics for April
Source: [U.S. Drought Monitor](https://droughtmonitor.unl.edu)