# State of Maine
# Drought Task Force
# Report on Current Hydrologic Conditions
# July 11, 2022

*Drought conditions have substantially worsened across southern and central portions of the state during summer 2022. This report serves to inform Drought Task Force members and the public of current drought conditions, reservoir levels, precipitation, temperature forecasts, and the online resources used to monitor these conditions.*

## Overview

- As of 7 July 2022, the U.S. Drought Monitor reports that 38.68% of the state is Abnormally Dry (8 counties) and 35.69% is in Moderate Drought (14 counties).
- An estimated 75.9% of Maine's population resides in abnormally dry or drought-stricken regions
- The majority of monitored streamflow conditions are below to much below normal flow conditions, with a few stations within the lowest 1% of all recorded streamflows.
- Few drought related impacts have been reported so far, but more may occur as conditions are not expected to improve in the short term
- The next Drought Task Force report will accompany a virtual meeting on August 4, 2022

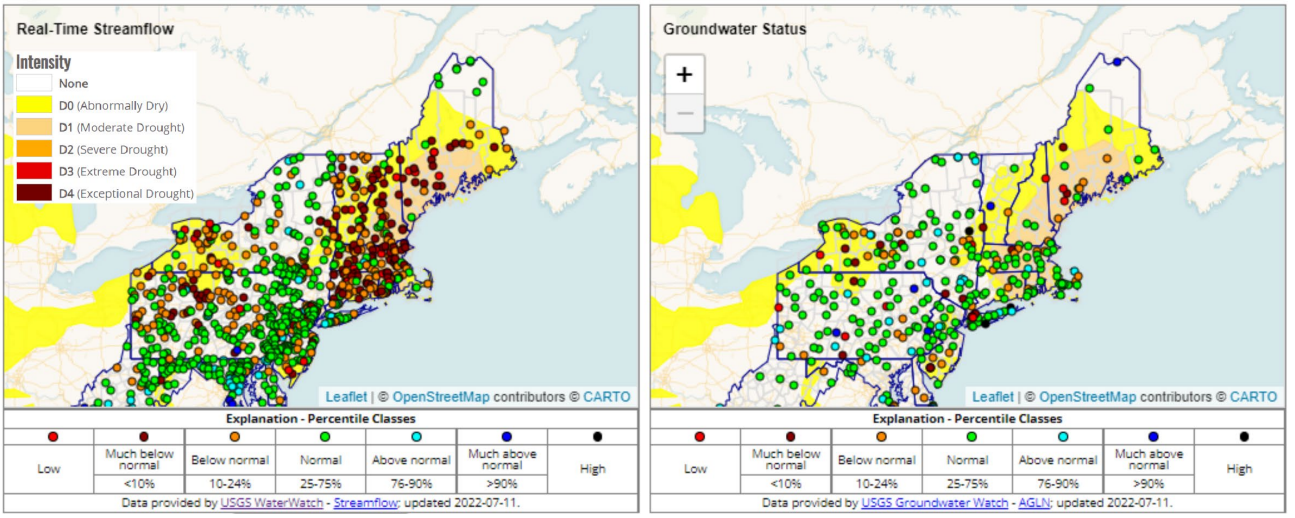



Figure 1: USGS maintains real time surface level water (left, shown here overlain on US Drought Monitor Map) and groundwater information (right). U.S. Drought Monitor: https://droughtmonitor.unl.edu; Water Watch: waterwatch.usgs.gov; Ground Water Watch: groundwaterwatch.usgs.gov, Northeast DEWS Dashboard: http://nedews.nrcc.cornell.edu/

***Access Drought Task Force reports here*:** https://www.maine.gov/mema/hazards/drought-task-force. This report summarizes information presented by Task Force members on current hydrologic and drought conditions as of this date. Task Force partners will report any drought-related impacts for which they are notified.

## Current Hydrologic Conditions

### *Stream Flows*

In mid to late May, the majority of long-term streamflow stations in Maine were reporting below normal (10-24$^{th}$ percentile) to much below normal (<10$^{th}$ percentile) conditions when compared with historical data. Early June showed improvement due to intermittent storms, but that relief was short-lived. The current below normal conditions are mainly observed south of Millinocket, with Aroostook County rivers in the normal or above normal range.

***Ground Water***

Groundwater levels in western Maine are still impacted by persistent drought conditions from 2021. In Eustis, for example, spring recharge only resulted in improvement into below normal conditions. Prior to this recharge, this well was recording record low values for Nov. 2021 to Mar. 2022 based on the 20 years of record at the site. Similar trends were observed in Oxford, where groundwater levels have not been in the normal range in the past 12 months. Other wells in the drought-impacted area are reporting normal conditions, however, such as Sanford and Litchfield. It is important to highlight that some USGS real time wells are not reporting current statistics, with statistics for prior months used in current products.

**Weather Review and Outlook**

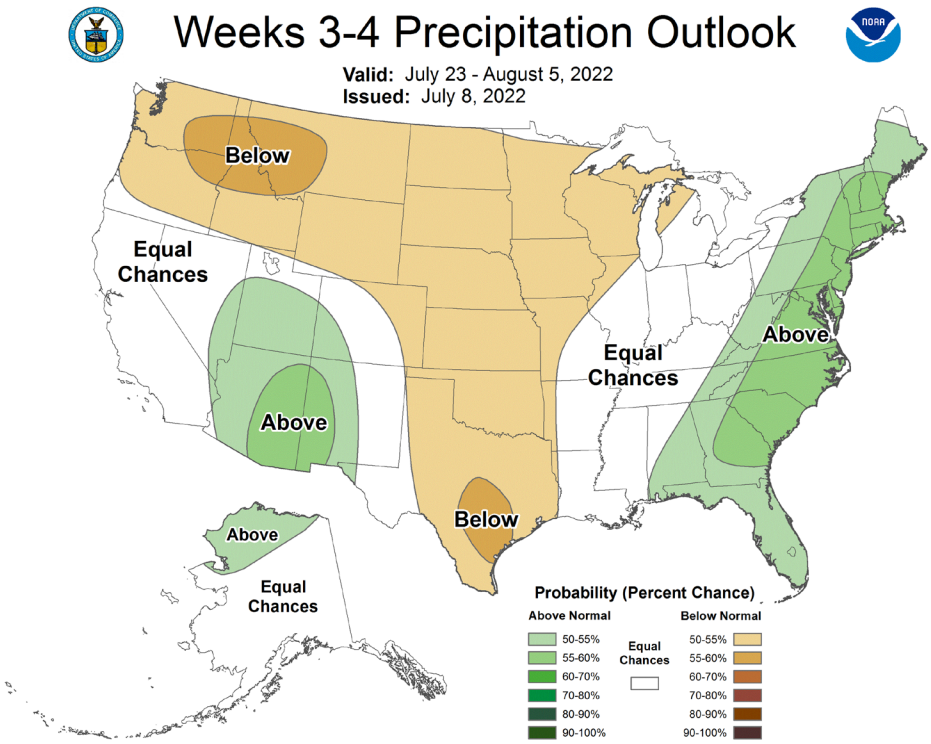
Winter Overview: According to the NWS Gray Forecast Office Drought Information Statement: The winter's snowfall deficit across all but northern Maine played a role in the re-emergence of drought in 2022. For most sections in Maine, winter failed to deliver the expected amount of snowfall with snowpacks well below normal by spring. Most areas received near normal precipitation in the course of the winter season, though in central and southern Maine it frequently fell as rain due to warm temperatures. Overall, seasonal snowpack was 1 to 3 feet below normal in southern and central Maine. The exception to this was in Aroostook County where snowfall was more than a foot above average. If one combines the snowfall deficits from the winter 20-21 and 21-22, the departures are 4 to 7 feet below normal for many portions of the state. (see figure below)

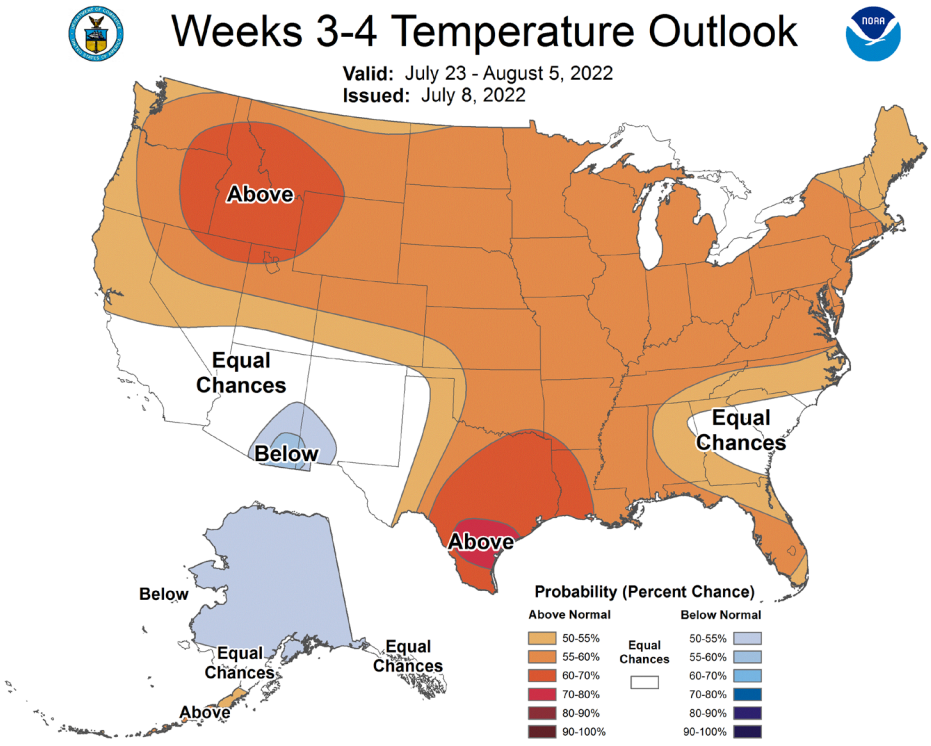
Spring Overview: The spring thaw arrived approximately 2 to 4 weeks early for all but northern Maine, resulting in an earlier than normal discharge along area waterways. The rest of spring lacked the typical rain frequency resulting in below average precipitation for most areas in April and May.

Summer Overview: The more recent drying phase which stared in mid June rapidly reduced surface water and brought on flash drought conditions. One favorable condition for drought onset was near to below normal temperatures. However, dewpoints were below normal as many airmasses have lacked the high humidity and limited convection and heavy rain events. In northern Maine, streamflows remain at 100% to 150% of normal in spite of the recent precipitation deficit.

The best scenario for improved streamflows will be sustained cool weather and well above-normal widespread precipitation, ideally light in intensity for maximum ground absorption. The National Climate Prediction Center however is not anticipating a strong chance for either. The precipitation outlooks (July 6, 2022) favors near, or slightly above normal chances for the rest of July and through the summer season, but no strong signals currently exist. The temperature outlooks for the rest of summer show a strong likelihood of above normal conditions. Drought conditions are expected to persist through at least the month of July, with the potential for deteriorating conditions.

| | **2022 Precipitation (inches) ending July 9, 2022** | | | | | |
|---|---|---|---|---|---|---|
| | Last 30 Days | | Since Jan 1 | | Since Oct 1 | |
| **Station** | Observed | Departure | Observed | Departure | Observed | Departure |
| Bangor Area | 1.44 | -2.26 | 19.32 | -1.23 | 29.74 | -2.95 |
| Caribou Area | 3.79 | -0.41 | 23.18 | +3.36 | 31.68 | +0.94 |
| Houlton Airport | 3.36 | -0.08 | 17.82 | -1.06 | 25.2 | -4.7 |
| Millinocket Area | 3.11 | -1.28 | 22.56 | -0.07 | 33.72 | -2.54 |
| Portland Area | 1.12 | -3.40 | 17.37 | -7.55 | 30.48 | -9.10 |
| Rangeley 2NW | 2.99 | -1.53 | 19.85 | -0.11 | 26.64 | -3.91 |


Weeks 3-4 Precipitation Outlook
Valid: July 23 - August 5, 2022
Issued: July 8, 2022
Below
Equal Chances
Above
Equal Chances
Above
Below
Above
Equal Chances
Probability (Percent Chance)
Above Normal
50-55%
55-60%
60-70%
70-80%
80-90%
90-100%
Equal Chances
Below Normal
50-55%
55-60%
60-70%
70-80%
80-90%
90-100%


Weeks 3-4 Temperature Outlook
Valid: July 23 - August 5, 2022
Issued: July 8, 2022
Above
Equal Chances
Below
Equal Chances
Above
Below
Equal Chances
Equal Chances
Above
Probability (Percent Chance)
Above Normal
50-55%
55-60%
60-70%
70-80%
80-90%
90-100%
Equal Chances
Below Normal
50-55%
55-60%
60-70%
70-80%
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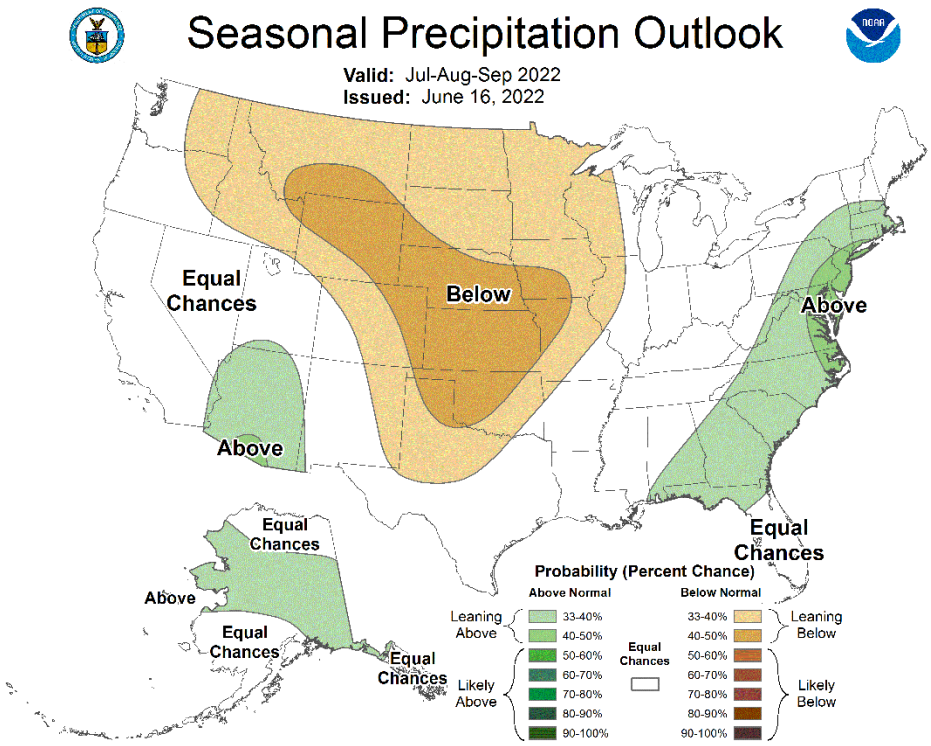
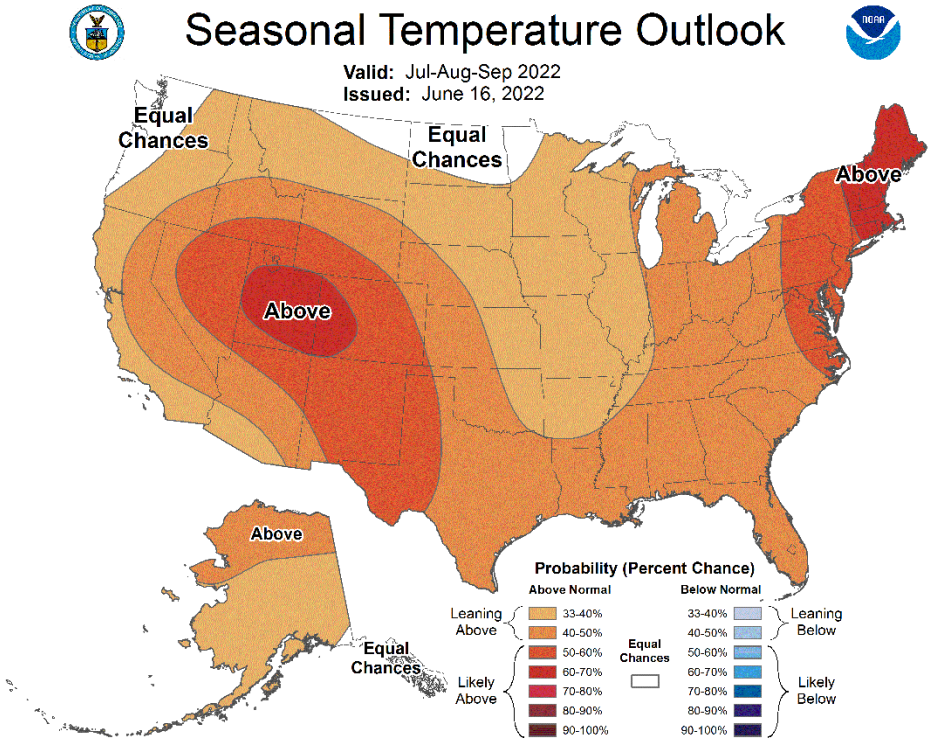
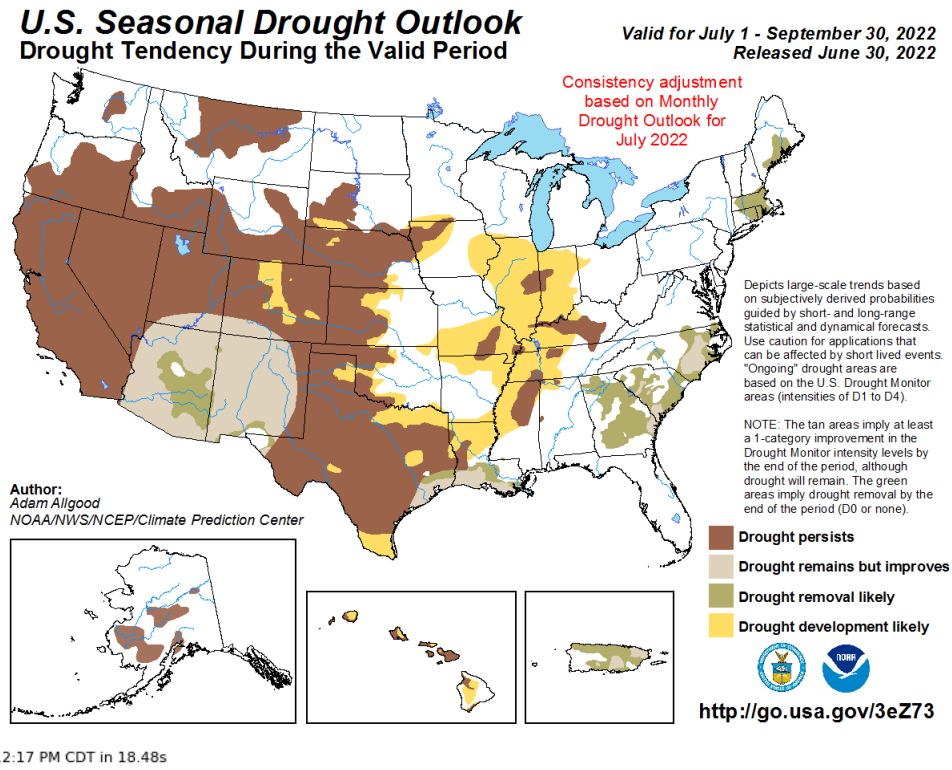
90-100%


Seasonal Precipitation Outlook
Valid: Jul-Aug-Sep 2022
Issued: June 16, 2022
Equal Chances
Below
Above
Above
Equal Chances
Equal Chances
Above
Equal Chances
Equal Chances
Probability (Percent Chance)
Above Normal
Below Normal
Leaning Above
33-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Likely Above
Equal Chances
Leaning Below
Likely Below


Seasonal Temperature Outlook
Valid: Jul-Aug-Sep 2022
Issued: June 16, 2022
Equal Chances
Equal Chances
Above
Above
Above
Equal Chances
Probability (Percent Chance)
Above Normal
Below Normal
Leaning Above
33-40%
40-50%
50-60%
60-70%
70-80%
80-90%
90-100%
Likely Above
Equal Chances
Leaning Below
Likely Below




(NOTE THIS GRAPHIC IS THE ACCUMULATED DEFICITS FOR THE PAST 2 WINTERS)

## Headwater Storage Levels

- **Presumpscot River** – The water level at Sebago Lake is currently 264.8 feet, a decrease of 3" over the last week. Flow from Sebago Lake is currently 270 cfs total. On Tuesday July 14, 2022, the Gambo impoundment will be drawn down approximately 3 feet for the purpose of resurfacing the upstream eel ramp, which is expected to take 2 days.

- **Androscoggin River** – The Androscoggin River basin is 88.4% full which is 0.4% below the long-term average. Rangeley Lake is down 0.24 feet with an outflow of 20 cfs, Mooselookmeguntic is down 1.28 feet with an outflow of 250 cfs, Richardson Lake is down 2.05 feet with an outflow of 400 cfs, Aziscohos is down 3.18 feet with an outflow of 340 cfs, and Errol is down 1.76 feet with an outflow of 1,000 cfs. River flows remain stable, discharging 1,100 cfs at Gorham, 1,300 cfs at Rumford, and 1,900 cfs at Auburn.

- **Kennebec River** – The Kennebec River basin is 92.9% full, 0.9% above the long term average for this time of the year. Brassua is down a total of 1.95 feet with an outflow of 706 cfs, while storage impoundments at Moosehead Lake are down 0.48 feet with an outflow of 1,431 cfs. Flagstaff Lake is down 0.76 feet with an outflow of 431 cfs. River flows remain relatively stable, discharging 1,950 cfs at Solon, 2,205 cfs at Madison and 2,255 cfs at Weston.

- **Penobscot River** – Inflows in the Penobscot watershed are currently very low, and impoundment levels are dropping**.** North of the Seboomook impoundment, the Penobscot River shows flows of 43 cfs, 30% lower than the long-term average. The Seboomook impoundment is currently 4 feet below full pond and dropping. Storage for the West Branch of the Penobscot is 46.69 BCF, only slightly below average. Even though Ripogenus and North Twin natural inflows remain below average, the Ripogenus available water is currently in the normal range.

- **Union River** –Graham Lake is currently down 2.09 feet from the long-term average elevation.

- **St. Croix River** –East Grand Lake is 71.33% full, and outflow is 100 cfs; and West Grand is 74.39% full and outflow is 100 cfs. Grand Falls is 68% full, while downstream flow is 1118 cfs. Vanceboro (Spednic) is 83.62% full and outflow is 483 cfs. Baring flow on July 12, 2022 was 914 cfs.

## Drought Impact Sectors

### *Public Water Suppliers*

The Maine CDC Drinking Water Program (DWP) has not received any reports of water outages from public water systems (PWSs) this year. We have received notifications regarding low yield in some wells in the western mountains and Somerset County.

### *Private Well Owners*

Five privately owned wells have reportedly run dry during this year; three of these wells are located in Cumberland County and the remaining two are located in Kennebec County. Maine homeowners with dry wells are encouraged to report this information to the Dry Well Survey: https://maine-dry-well-survey-maine.hub.arcgis.com/.

For low income homeowners requiring assistance with dry private wells (including drilling a well deeper, drilling a new well, laying pipes to the home, associated labor costs, etc.) please refer to the USDA Single Family Housing Repair Program or the Maine State Housing Authority Home Repair Program.

### *Agricultural Conditions*

Soil moisture has been low in southern and central Maine. Farmers have been irrigating crops. No water supply shortages have been reported thus far. Hay crops have been excellent but recent dry conditions may impede hay growth.

### *Wildfire Conditions*

No drought impacts have been reported at this time.

### *Environmental Conditions*

No drought impacts have been reported at this time.

## About this Report

**Current information represents a "snapshot" of conditions throughout the state for the date of reporting.** This report provides information on the preliminary effects of the drought and more monitoring must be done to assess potential impacts if the situation worsens. These consitions will be monitored, and the Drought Task Force will monitor the situation until warning indicators subside.

The Maine Drought Task Force is composed of representatives from major river basin management operations, utility operators as well as state agencies and federal agencies. The Task Force is convened when necessary based on drought threat, and members will stay in close communication until the dry conditions subside.

## Information Resources

Please refer to these sources for more information on current water conditions:

- Maine Drought Task Force website, with links to other reports and drought monitoring resources: https://www.maine.gov/mema/hazards/drought-task-force
- Drought.gov site for the State of Maine: https://www.drought.gov/states/maine
- Northeast DEWS: http://nedews.nrcc.cornell.edu/
- National Integrated Drought Information System: https://www.drought.gov/current-conditions
- U.S. Drought Monitor: https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?ME
- Well monitor data: https://groundwaterwatch.usgs.gov/StateMap.asp?sa=ME&sc=23
- Streamflow data: https://waterwatch.usgs.gov/?m=real&r=me
- Streamflow data aggregated by watershed: https://waterwatch.usgs.gov/index.php?m=dryw&r=me
- Maine Cooperative Snow Survey: https://www.maine.gov/dacf/mgs/hazards/snow_survey/
- NWS Gray short- and long-term forecasts: https://forecast.weather.gov/product.php?site=NWS&issuedby=GYX&product=AFD&format=CI&version=1&glossary=1&highlight=off
- NWS Caribou short- and long-term forecasts: https://forecast.weather.gov/product.php?site=NWS&issuedby=CAR&product=AFD&format=CI&version=1&glossary=1&highlight=off
- USDA farm assistance and loan programs: https://www.farmers.gov/protection-recovery/drought
- CoCoRaHS local volunteer weather condition monitoring: https://www.cocorahs.org/maps/conditionmonitoring/index.html

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