State of Maine
Drought Task Force
Report on Current Hydrologic Conditions
April 22, 2021

Statement on Drought Task Force Preliminary Activation

On Thursday, April 15, 2021, the US Drought Monitor classified 57.14% of the State of Maine as D0 (Abnormally Dry) status (Figure 1). Conditions have not changed substantially since this date, and they exceed the threshold required for activating the Drought Task Force (DTF), as stated in MEMA's Emergency Operations Plan Drought Annex. Given that these conditions have begun early in the year, and in combination with the many vaccination-related efforts currently taking precedence at MEMA, DTF Chairs from USGS and MEMA approve a preliminary activation of DTF. A preliminary activation involves weekly communication between MEMA, USGS, NWS, DWP, and other drought monitoring partners to compile a weekly email update on the status of drought in Maine. After approval these updates are submitted to DTF members. **In addition to drought monitoring responsibilities, DTF partners will report any drought-related impacts for which they are notified.** This preliminary approach will continue for as long as appropriate, potentially until the end of spring flows in May, or sooner if specific drought-related impacts are being felt around the state.

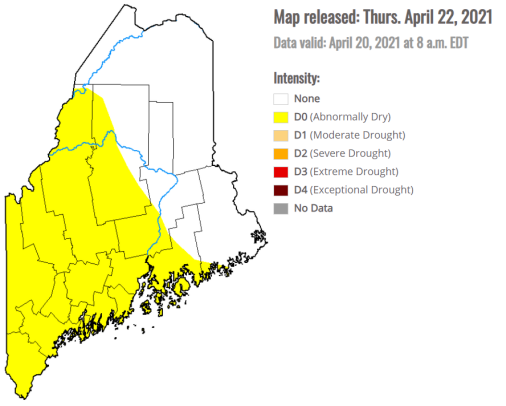

Figure 1: US Drought Monitor map released for the State of Maine (https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?ME)

Overview:

The Drought Task Force convened by email on Thursday, April 22, 2021 in response to the dry weather that has led to below average ground and surface water levels across Maine. Factors such as snowpack, stream flow, groundwater levels, reservoir levels, soil moisture, and weather forecasts are being monitored closely. This report summarizes the information presented on current hydrologic and drought conditions as of this date.

Current Hydrologic Conditions:

Stream Flows

Current stream flows vary statewide (Figure 2), though the majority trend below to much below normal. Stream flows in central Maine are much below normal relative to historic spring flow averages. Stream flows in northern and some southern/coastal portions of Maine are below normal to much below normal. However, recent rainfall has increased several stream flows to normal levels for

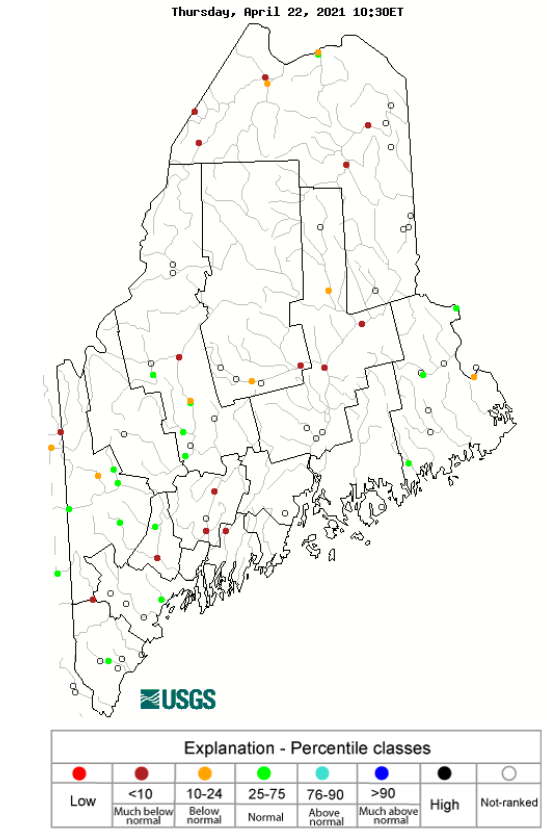

Figure 2: The United States Geologic Survey maintains real time surface level water (shown here) and groundwater information.
Water Watch: waterwatch.usgs.gov
Ground Water Watch: groundwaterwatch.usgs.gov

the moment. Low stream flows are a result of lower than average snow pack and early snowmelt that occurred in this past winter/spring.

Ground Water

Groundwater levels vary statewide from above normal to much below normal relative to historic springtime averages. Groundwater levels in northern Maine trend above normal to below normal, and ground water levels in the southern portion of Maine trend normal to much below normal.

The Drinking Water Program received a report of groundwater levels dropping in York County, which is unexpected for spring. Conditions generally worsen from north to south.

Headwater Storage Levels:

At present, hydro operators are aware of developing dry conditions and the upper storage impoundments are holding a little more water than the average for this time of the year where they can. The Androscoggin River storage reservoirs are approximately 18% over the long term average; the Kennebec River storage reservoirs are approximately 38% over the long term average; the Union River storage is slightly higher than its long term average; West Branch Penobscot is on the high side of what we saw last year but below the long term average, overall.

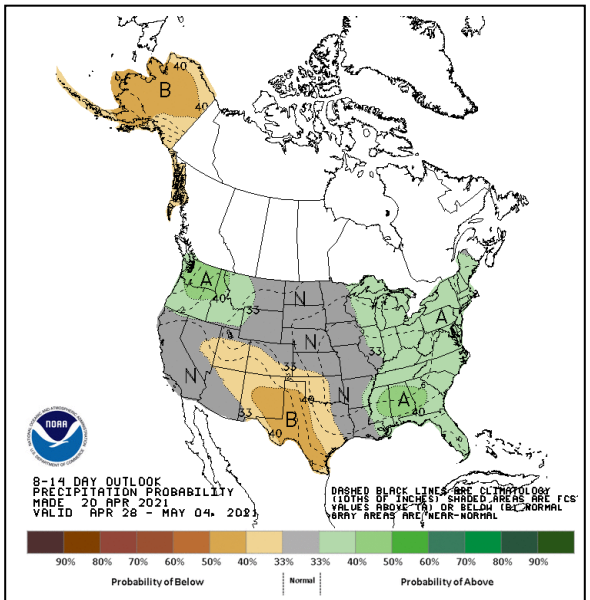

Figure 3: 8-14 day outlook, precipitation probability. For up to date information on the drought status and outlook check out the National Weather Service's Climate Prediction Center: www.cpc.ncep.noaa.gov

<u>Weather Outlook</u>:

According to the National Weather Service's Climate Prediction Center, probabilities slightly favor above normal precipitation over the next 2 weeks (Figure 3). In addition, probabilities favor above normal temperatures over the next 2 weeks after a quick cold snap to end the week. Some rain and possible snow are ongoing across the state as a cold front approaches from the west starting Wednesday, April 21. Snow accumulation could reach a few inches in higher terrain and in the northern part of the state on Thursday. Another storm system with potentially heavy rains and gusty winds is expected to arrive on Sunday and continue into Monday. Astronomical tides will be high during this expected rainfall and, depending on fetch and predominant wind direction, may lead to some coastal flooding.

As of April 21, yearly precipitation departure is -3.8 inches in Portland, -3.63 inches in Augusta, and -4.87 inches in Rangeley.

There are no strong indicators of weather trends beyond this time frame. All interests should monitor both weather forecasts and hydrologic factors as conditions progress.

<u>Drought Outlook</u>:

Currently 15 counties in Maine are partially or completely classified as abnormally dry. Dry conditions are expected to improve in New England from now to August, according to the National Weather Service's Climate Prediction Center US Seasonal Drought Outlook (Figure 4). However, DTF will continue to monitor abnormally dry conditions in the state until conditions broadly improve across Maine.

Conclusion:

The current information in this report represents a "snapshot" of conditions throughout the state as of April 21, 2021. 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. Many new factors will influence drought potential in Maine as the season progresses. These factors will be monitored, and the Drought Task Force will convene monthly to monitor the situation until warning indicators subside.

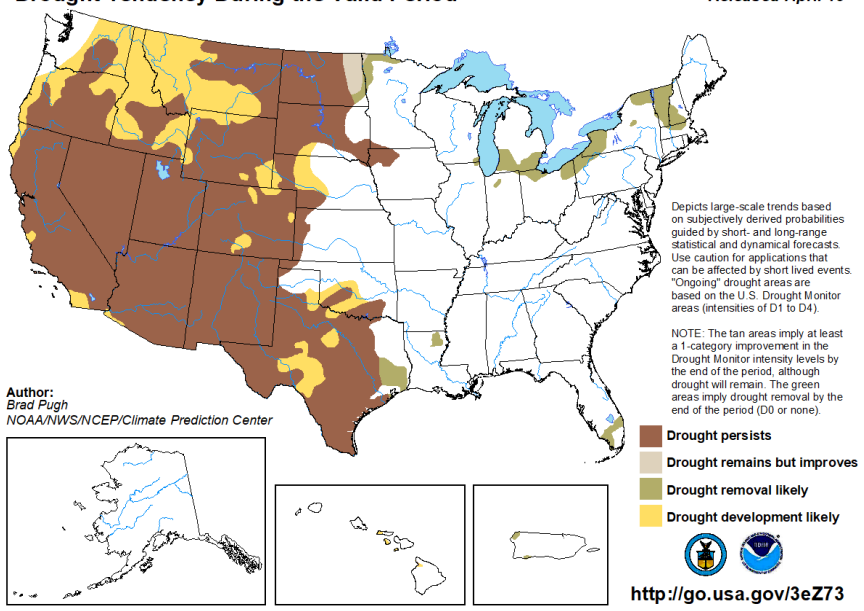

Figure 4: US Seasonal Drought Outlook indicates drought removal likely for New England (www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png)

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.

Drought Task Force members will stay in close communication until the dry conditions subside. The United States Geological Survey (USGS) provides real time ground and surface water level data and the U.S. Drought Monitor Program provides weekly drought outlooks.

Information Resources:

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

- 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

For additional information on aspects of this report, please contact:

Samuel Roy, Maine Emergency Management Agency	Drought preparedness and mitigation	Samuel.roy@maine.gov
Bob Lent/Nick Stasulis, USGS	Stream flow, groundwater levels	nstasuli@usgs.gov
Margaret Curtis/Donald Dumont, National Weather Service, Gray, Maine	Weather forecasting for southern and western Maine	gyx.hydro@noaa.gov
Louise Fode/Joseph Hewitt, National Weather	Weather forecasting for northern	Louise.fode@noaa.gov,

Service, Caribou, Maine	and eastern Maine	joseph.hewitt@noaa.gov
Kathy Howatt, Maine Dept. of Environmental Protection, Bureau of Land Resources	Dams/hydropower facilities and river basin management	Kathy.howatt@maine.gov
Susan Breau, Maine Drinking Water Program	Public Water Utilities	Susan.breau@maine.gov