

## State of Maine Drought Task Force Report on Current Hydrologic Conditions July 29, 2021

### Overview:

- Drought persists in Maine despite recent rainfall: 71.67% of the state is Abnormally Dry (12 counties), 32.72% in Moderate Drought (5 counties), 8.42% in severe drought (4 counties).
- Coastal and eastern Maine showed improvement in streamflow conditions, but fast moving storms were generally not conducive to groundwater recharge.
- Cooler and wetter conditions in July have improved drought conditions for southern portions of the state. Probabilities moderately favor below normal precipitation and temperatures across Maine over the next 6-10 days.
- The Maine CDC Drinking Water Program is receiving requests for assistance from public water systems statewide on drought preparedness and response.
- Recent rains have mitigated the fire danger in many parts of the state.
- Many farmers are reporting improved crop growth and quality. Some crop loss was noted from early summer drought.
- Please direct private well owners facing drought-related issues to the Dry Well Survey: [maine-dry-well-survey-maine.hub.arcgis.com](https://maine-dry-well-survey-maine.hub.arcgis.com), or [bit.ly/3iU6hvu](https://bit.ly/3iU6hvu). Mainers can either dial 211 or 1-877-463-6207, or they can text a Maine zip code to 898-211 for assistance with filling out the survey.

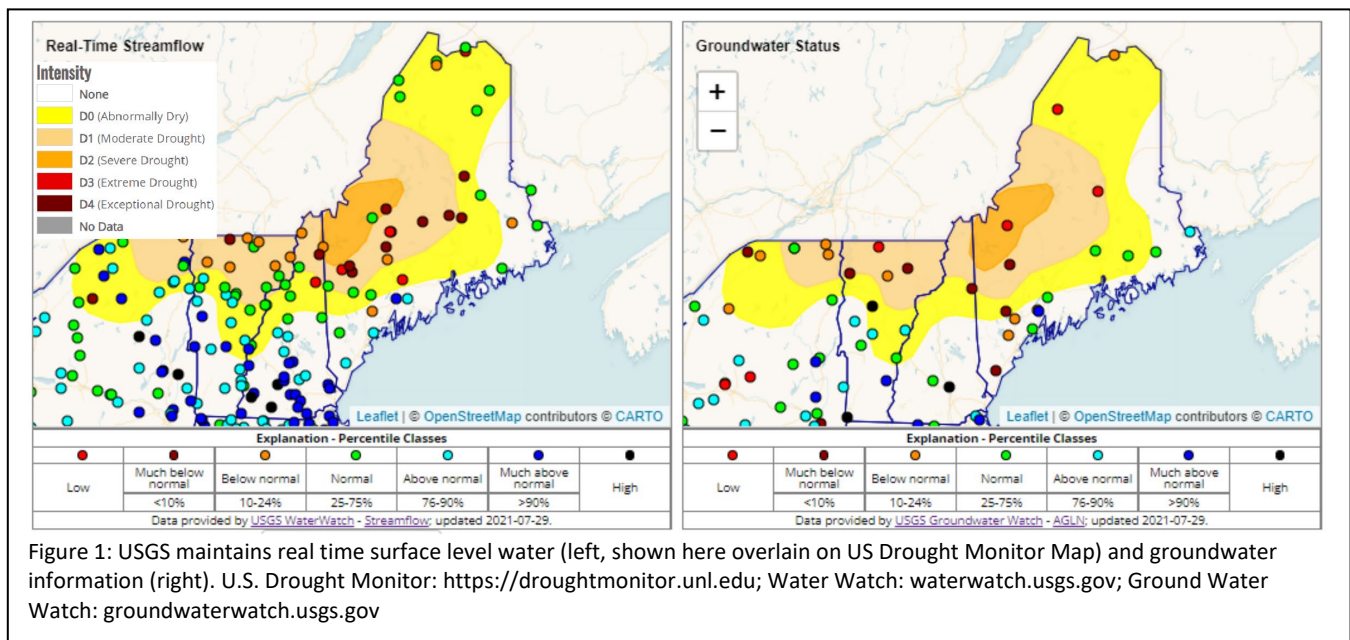


Figure 1: USGS maintains real time surface level water (left, shown here overlain on US Drought Monitor Map) and groundwater information (right). U.S. Drought Monitor: <https://droughtmonitor.unl.edu>; Water Watch: [waterwatch.usgs.gov](https://waterwatch.usgs.gov); Ground Water Watch: [groundwaterwatch.usgs.gov](https://groundwaterwatch.usgs.gov)

**In response to persistent drought, the Maine Emergency Management Agency publishes these biweekly Drought Reports. Previous reports are available 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***

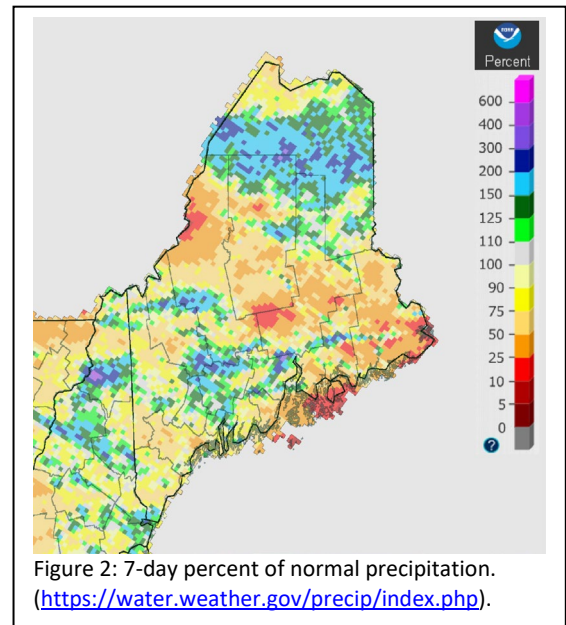
Coastal and eastern Maine showed improvement in streamflow conditions due to rain and cooler temperatures over the last two weeks (Figure 1). These areas are generally in the normal range. The St. John and Aroostook River basins are also showing normal conditions due to recent storms. Central and western parts of Maine, particularly regulated basins, are showing below normal conditions as recent rains have missed those areas and water is being held to fill upstream reservoirs.

### ***Ground Water***

Rainfall over the last two weeks resulted in varying response in wells monitored by the USGS (Figure 1). The fast moving storms were not conducive to groundwater recharge. Some wells showed little to no response, and others that had a response did not recharge enough to reach the normal range. Few improved into the normal range. Generally, eastern Maine shows normal groundwater conditions, while the rest of Maine is below normal overall.

### **Weather Outlook:**

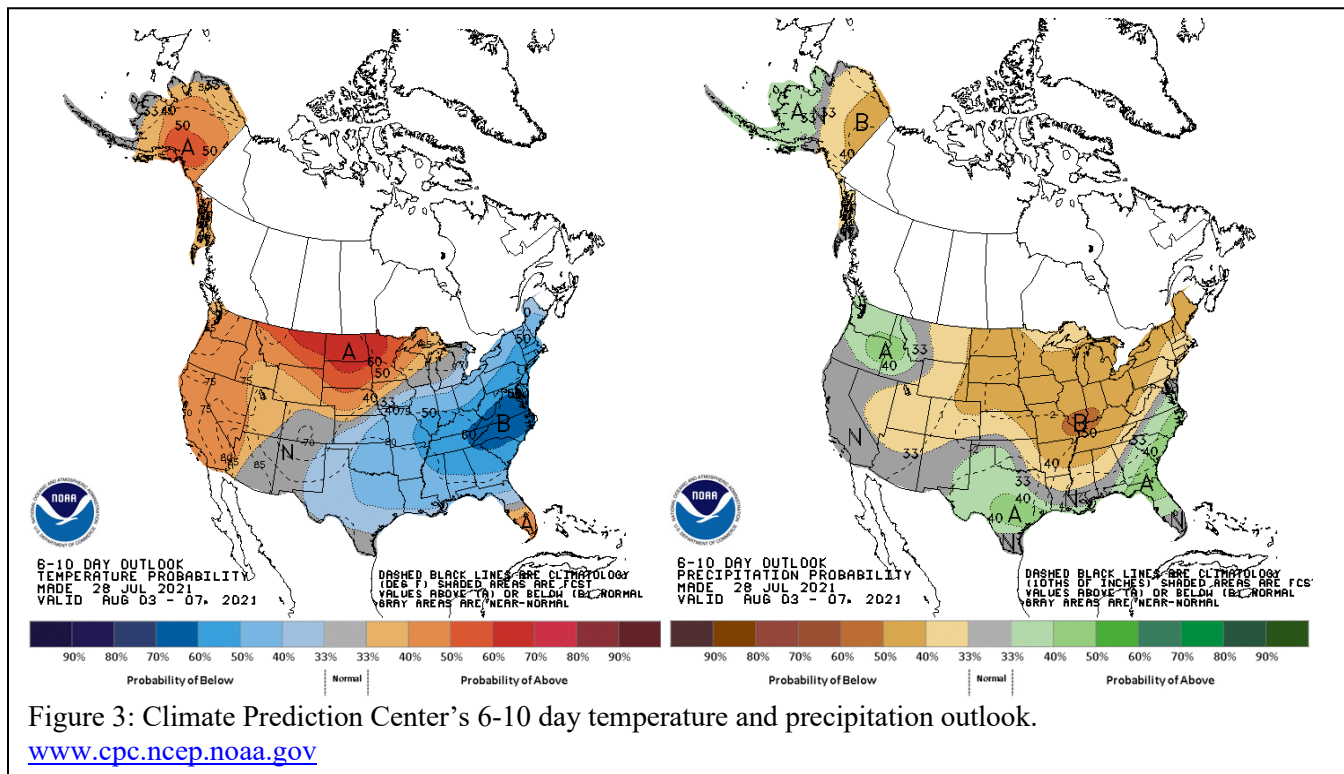
Cooler and wetter weather conditions in July have improved drought conditions for southern portions of the state, with some central and northern areas remaining the same. Temperatures were below normal across the state, resulting in less evaporative stress on the system than would typically occur in July. The fairly active weather pattern brought frequent scattered showers to much of the state (Figure 2), helping to reduce annual rainfall deficits for all but northern areas. However, these short bursts of torrential rainfall lead to increased runoff and less groundwater recharge than would otherwise occur with a longer persistent rainfall. Though surface soil moisture has improved for much of the area, the long-term ground water recharge remains limited given increased evaporation along with peak water withdrawal for vegetation.



As of this week, yearly precipitation departure is -3.85 inches in Portland, -4.14 inches in Augusta, -8.21 inches in Rangeley, -3.88 inches in Bangor, -2.45 inches in Caribou, -4.25 inches in Houlton, and -5.46 inches in Millinocket.

Heavy rain maker moves into the region tonight, expected to bring most areas close to an inch of rainfall, with locally higher amounts possible. The forecast for the next week continues the below normal temperatures with most areas in the 70s with lows dipping into the 40s inland. High pressure will move in over the weekend, with another chance for rainfall moving in late Sunday into early next week. According to the National Weather Service's Climate Prediction Center, probabilities moderately favor below normal precipitation and temperatures across Maine over the next 6-10 days (Figure 3), and for the next 8-14 days probabilities slightly favor near normal rainfall and below normal temperatures.

The precipitation outlook can change rapidly during late summer, especially during an active tropical season. Currently increased levels of Saharan Dust in the Atlantic are keeping the tropical activity in check as it limits the amount of moisture available for storm development. All interests should monitor both weather forecasts and hydrologic factors as conditions progress. Meanwhile models in the Pacific Ocean are identifying a developing La Nina, and the Climate Prediction Center has issued a La Nina watch. This could influence winter and spring precipitation if La Nina develops this fall.



### Headwater Storage Levels

Storage conditions in the major river basins as reported by the hydropower companies this week are as follows:

- **Presumpscot River** – The water level in Sebago Lake is 264.87 feet, a 1.0” increase for the week which is 1.9 feet below the spillway crest. At this time of year, the License and Water Quality Certification for the Eel Weir dam calls for an increase of flow from 270 cfs to 408 cfs in support of increased dissolved oxygen to downstream habitat. To mitigate low water levels in Sebago Lake, Sappi, the hydro operator, consulted with MDEP and other agencies concerning maintaining the downstream flow at 270 cfs. MDEP concurred that continuing to flow 270 cfs at this time downstream of the Eel Weir Dam and out of Sebago is the best course of action to balance downstream minimum flows and water levels in Sebago. Sappi will continue monitoring DO in the downstream Gambo impoundment and will inform MDEP if DO measurements begin to fall below 7 PPM.
- **Androscoggin River** – Storage conditions in the upper Androscoggin River basin are reported to be 68.4% full this week, which is 16.4% below the long-term average. Generally water levels have decreased between 0.41 and 10.4 feet on the high end. Flow reductions at the upper reservoirs remain in place for Rangely, Mooselookmeguntic, Richardson, Azischohos and Errol Dam/Lake Umbagog.
  - Gauges:
  - Gorham, NH – 1,150 cfs
  - Rumford, ME – 1,500 cfs
  - Auburn, ME – 2,200 cfs
- **Kennebec River** – Storage conditions in the upper Kennebec River basin are reported to be 79.7% full, a decrease from the last report, which is 9.4% below the long-term average for this time of the year. Water levels are down 1.80 feet in Moosehead, 2.30 feet in Flagstaff and 2.80 feet in the Brassua. Recreational whitewater releases from Flagstaff lake have been cancelled for the month of August 2021.
- **Penobscot River** – Total storage in the West Branch Penobscot remains below the long-term average for mid to late July and is currently stable but is declining. North Twin storage is

steady, Ripogenus storage is below the long-term average and declining, and the four small storage reservoirs continue a slow downward trend. Water levels requirements in the small storage reservoirs are not being met, but resource managers decided to continue moderate flow reductions in order to protect downstream river habitats to the extent possible.

- **Union River** – Being that the watershed is located more closely to the coast, the Union River has benefited from the recent coastal precipitation including tropical storm Elsa. Storage in the Union River in Graham Lake is 0.6 feet above the long-term average for late July but in order to follow the long-term trend more precipitation is needed.
- **St. Croix River** – The basin manager did not submit an updated basin report at this time. As of the last update on July 15, the East Branch St. Croix is reportedly 82% full and the West is 76.5% full, with total river flow below Woodland at 815 cfs. Water levels in the basin continue to decrease due to minimal precipitation.

## Drought Impacts

### **Public Water Systems**

The Maine CDC Drinking Water Program (DWP) is receiving requests for assistance from public water systems (PWSs) statewide on drought preparedness and response. Many PWSs are preparing for continued drought conditions by tracking source water levels, updating their emergency response plans, and communicating with response partners. Some PWSs have issued voluntary water conservation orders. The South Berwick Water District has issued emergency mandatory water use restrictions. Most of the reported water quantity issues are from southern, western mountain, and coastal areas.

### **Dry Wells**

Fifteen dry private wells have been reported in Aroostook, Cumberland, Oxford, Lincoln, Franklin, York, Kennebec, and Penobscot counties (Figure 4). At this time, Maine homeowners with dry wells are encouraged to report this information to the Dry Well Survey: [bit.ly/3iU6hvu](https://bit.ly/3iU6hvu).

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](#).

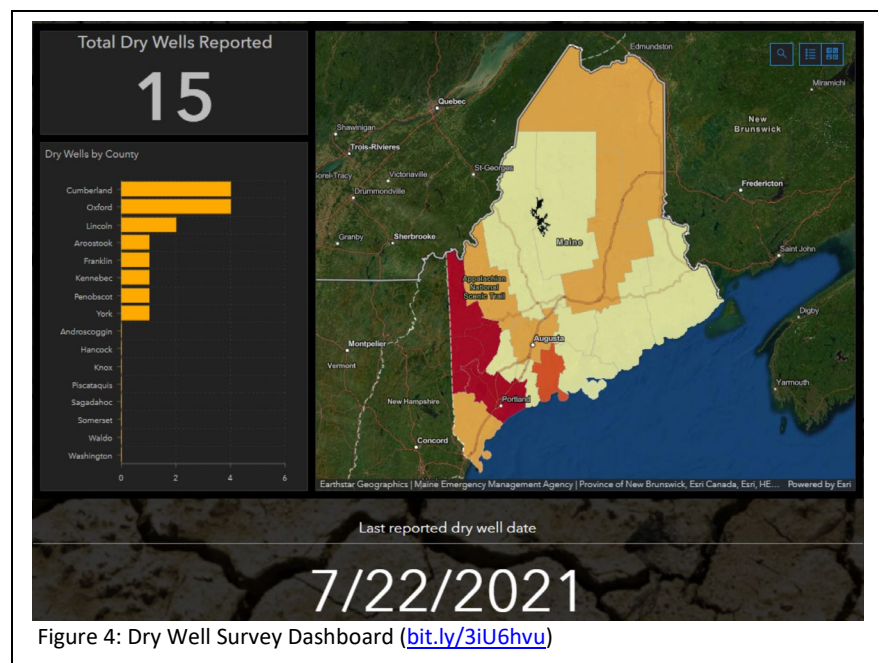


Figure 4: Dry Well Survey Dashboard ([bit.ly/3iU6hvu](https://bit.ly/3iU6hvu))

### **Wildfire conditions**

Recent rains have helped the fire danger in many parts of the state. Since January 1<sup>st</sup>, we have had 581 wildfires in Maine. That number drops to 31 fires in the last 30 days, with just 5 fires in the last week. Most or all of our 12 fire weather zones have recently calculated fire indices hovering between low and moderate. It seems that much of our precipitation has been on the weekends where we historically experience the highest fire numbers. Having rain on a weekend deters many from burning and it certainly limits or eliminates the chance of a fire escaping. We should expect a rise in fire activity if we start into another prolonged drying trend.

## Agricultural Conditions

Persistent showers have reduced the need for supplemental irrigation of crops in many areas. Many farmers are reporting improved crop growth and quality. Some crop loss was noted from early summer drought. Federal and state agricultural offices will continue to monitor precipitation and crop conditions.

The USDA Farm Service Agency (FSA) is monitoring the drought situation and the information from the Task Force. At this time, FSA does not have any updates and we do not have any programs that have been triggered due to the current situation.

## Drought Outlook

A substantial amount of precipitation is needed to end current dry conditions (Figure 5). In northern Maine, 15.6 inches of rainfall, or 130.71% of normal summer/fall precipitation, is required within the next three months to return to normal conditions. However, all drought conditions in Maine are expected to improve within the next three months based on NOAA NCEP Climate Prediction Center models ([go.usa.gov/3eZ73](https://go.usa.gov/3eZ73)). **The Task Force will continue to monitor abnormally dry conditions in the state until conditions broadly improve across Maine.**

## 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. Many new factors will influence drought potential in Maine as the season progresses. These factors 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.

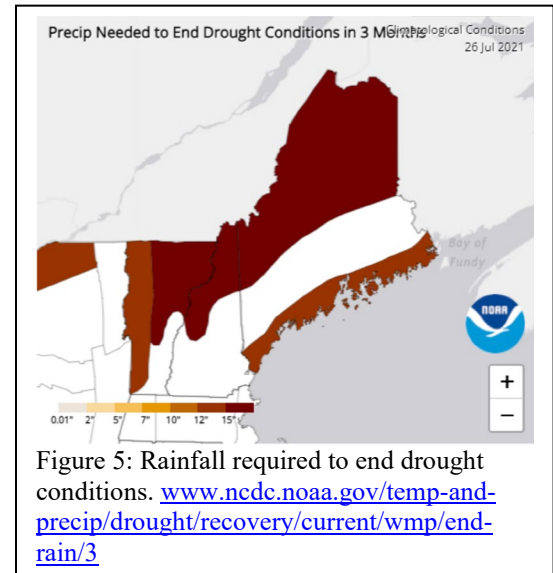


Figure 5: Rainfall required to end drought conditions. [www.ncdc.noaa.gov/temp-and-precip/drought/recovery/current/wmp/end-rain/3](https://www.ncdc.noaa.gov/temp-and-precip/drought/recovery/current/wmp/end-rain/3)

## **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>
- 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/](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>

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