

State of Maine Drought Task Force Report on Current Hydrologic Conditions August 4, 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

- The [U.S. Drought Monitor](https://droughtmonitor.unl.edu/) reports that 25.93% of the state is Abnormally Dry (9 of 16 counties), 31.71% is in Moderate Drought (11 of 16 counties), and 8.14% is in Severe Drought (8 of 16 counties) by area. Conditions are not expected to improve in the short term.
- An estimated 76.5% of Maine’s population resides in abnormally dry or drought-stricken regions.
- The majority of monitored streamflow conditions in central and southern Maine are below to much below normal flow conditions, with one station (Andover) within the lowest 1% of all recorded streamflows.
- A drier than average July has led to an increase in drought related impacts for agriculture, private well owners, and public water suppliers.
- Farmers who have irrigation systems are using them. Drought has increased operating costs. Farmers lacking irrigation are expected to have reduced quantity and quality of yields, and crop losses if the drought persists or intensifies.
- The next Drought Task Force report will accompany a virtual meeting on September 8, 2022

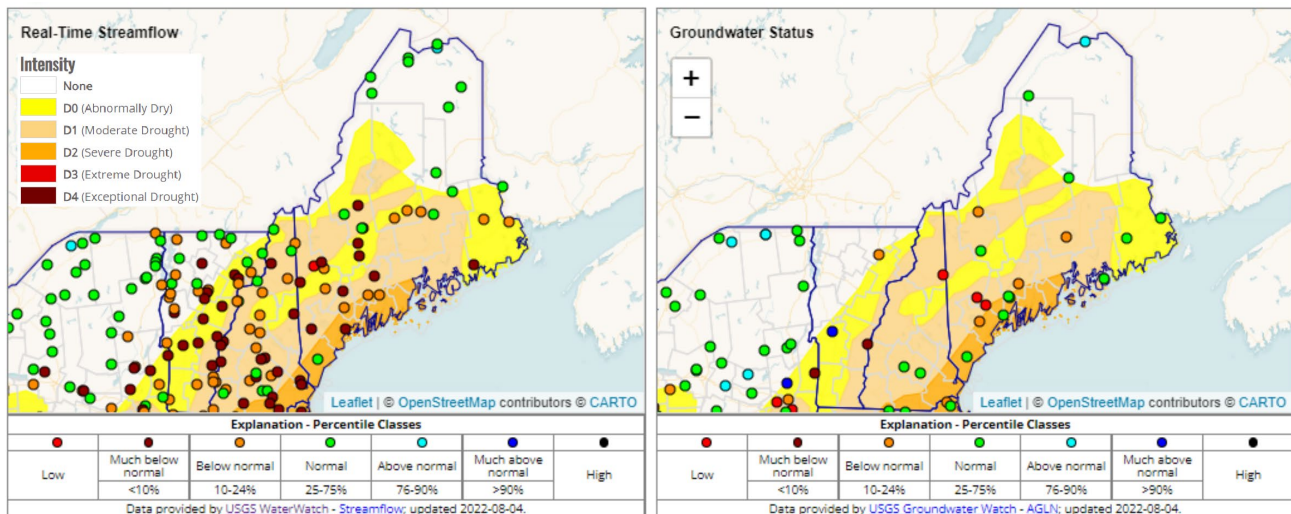


Figure 1: USGS maintains real time surface level water (left, shown here overlain on US Drought Monitor Map) and groundwater information (right). U.S. Drought Monitor: <https://droughtmonitor.unl.edu/>; Water Watch: waterwatch.usgs.gov; Ground Water Watch: groundwaterwatch.usgs.gov, Northeast DEWS Dashboard: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

Access Drought Task Force reports here: 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

The northern half of Maine (north of the Piscataquis basin) is normal to above normal, having benefited from intermittent passing storm this summer. Southern and coastal basins are generally below normal

(10-25th percentile), though about ¼ of stations statewide are in the lowest 10th percentile of all data collected for a given day. Regulated basins are variable, but follow this same trend overall.

Ground Water

Real time monitoring wells in northern and eastern Maine are in the normal range, having benefited from fall/winter/spring recharge. Southern Maine monitoring wells are trending below normal, but came into last winter in a normal condition. Some western Maine wells (north of Sebago Lake and west of I95) are showing below normal conditions for the last 12 months. This is due to an accumulation of impacts from ongoing drought conditions and a below normal snowpack last winter.

Weather Review and Outlook

One week outlook: The overall weather pattern goes through a shift over the next week. Through the weekend, high pressure aloft will continue to bring warm, moist air over the state. The highest temperatures are expected Thursday and Friday of this week, but warmer than average temperatures will continue through the weekend. A front is expected to move through on Thursday, but widespread precipitation is not expected, although rainfall may be high in individual storms. By Monday, the pattern will shift and a trough will move overhead, which allows for more frequent frontal passages. This should both cool the temperatures and bring a broader swath of precipitation for the beginning of next week. Currently, rainfall estimates for Monday are ranging around 0.5", with most of the precip falling across the north and west.

Two week outlook: The trough will remain overhead through the second week, which will trend toward cooler temperatures across the state. The current outlook from the Climate Prediction Center indicates moderate confidence in below average temperatures, and no strong signals for precipitation trends. This reflects that the upper level pattern (trough) has the potential to bring several quickly moving fronts through, but at this point it's difficult to tell how much precipitation would fall from any particular event.

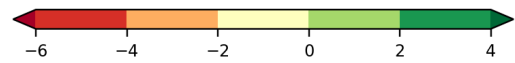
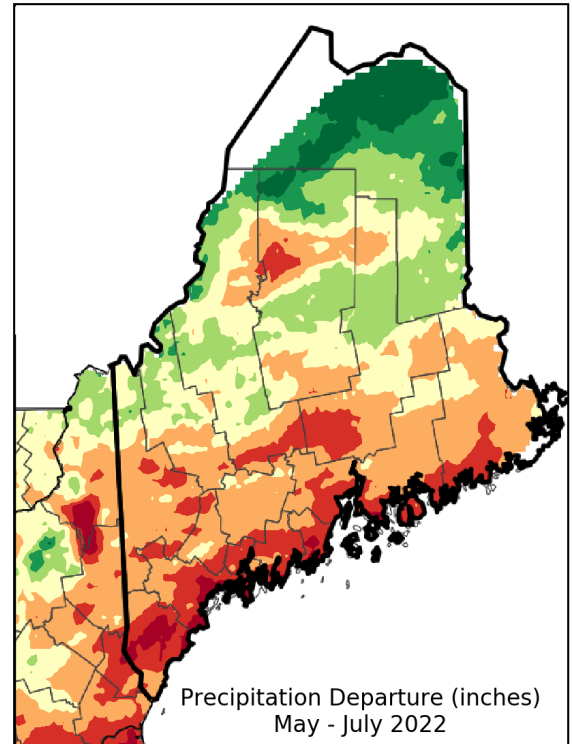
Station	2022 Precipitation (inches) ending Aug 4, 2022					
	Last 30 Days		Since Jan 1		Since Oct 1	
	Observed	Departure	Observed	Departure	Observed	Departure
Bangor Area	2.91	+0.06	22.04	-1.01	32.46	-2.73
Caribou Area	3.97	-0.04	25.83	+2.75	34.33	+0.31
Houlton Airport	4.87	+1.42	21.93	+0.23	29.31	-3.41
Millinocket Area	5.26	+1.33	22.62	-0.85	32.90	-2.67
Portland Area	1.28	-2.03	19.78	-7.33	34.17	-6.94
Rangeley 2NW	4.25	+0.12	23.36	-3.92	30.15	-7.45

Winter Overview: 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.

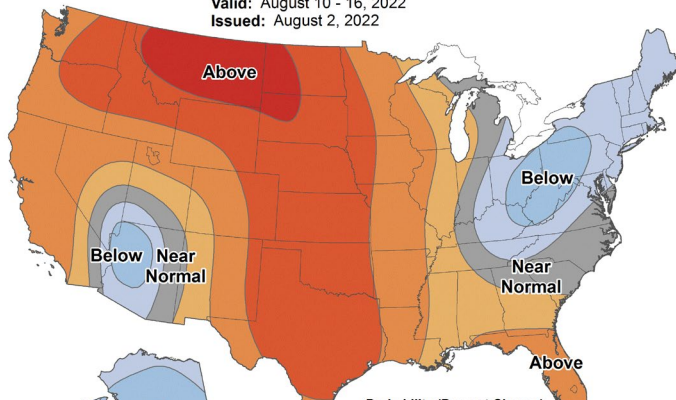
Spring Overview: The spring thaw arrived approximately 2 to 4 weeks early for all but northern Maine, resulting in an earlier than normal discharge along area waterways. The rest of spring lacked the typical rain frequency resulting in below average precipitation for most areas in April and May.

Summer Overview: Rainfall deficits began in the spring across central and southern Maine, however the drying of surface water accelerated in mid June when temperatures began to warm and water demands grew. Most areas of Maine received one to two inches below normal rainfall in June, apart from the Aroostook County. In July, above normal rainfall extended across northern Maine including parts of western Maine Lakes Region. From the foothills southward precipitation was near normal with totals generally 75% and 125% of normal. Below normal rainfall, from 50% to 75% of normal, were common across southern Maine though spotty storm activity led to wide distributions in these areas. Temperatures meanwhile soared, with southern Maine 4-5°F above normal. Subsequently, evaporation measured between 5 and 6 inches for the month, exceeded precipitation amounts for most of the state resulting in a net loss in surface water.

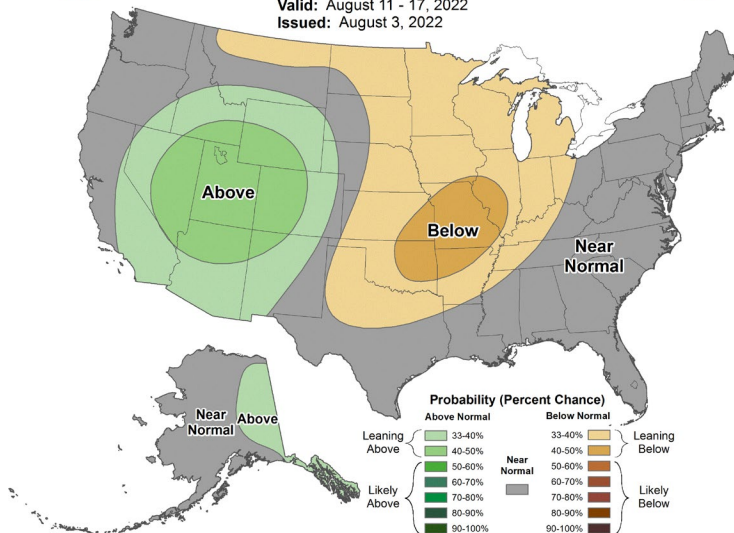
**At this moment, the NWS Palmer Drought Severity Index service is malfunctioning and should not be used for decision support purposes. This service should be fixed and back online by next week.*



8-14 Day Temperature Outlook
Valid: August 10 - 16, 2022
Issued: August 2, 2022



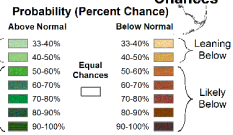
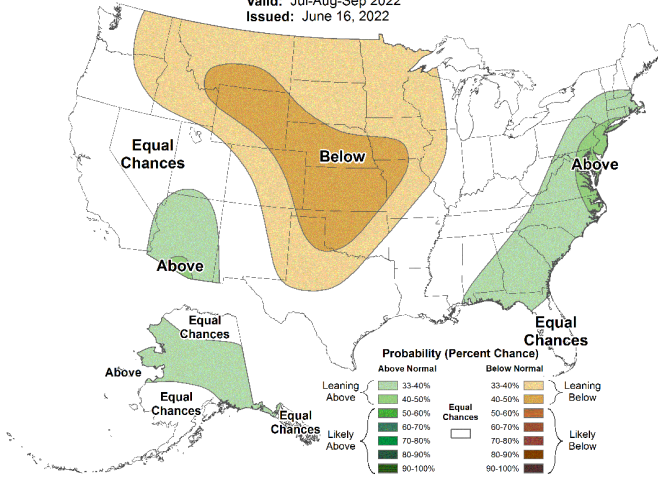
8-14 Day Precipitation Outlook
Valid: August 11 - 17, 2022
Issued: August 3, 2022





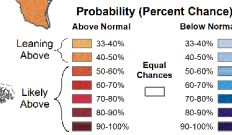
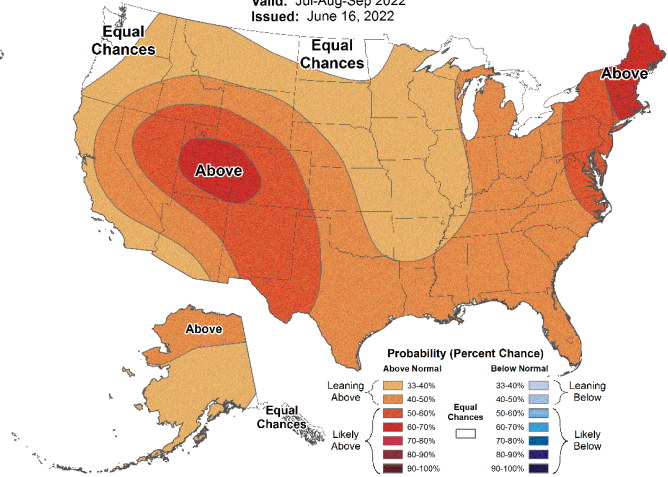
Seasonal Precipitation Outlook

Valid: Jul-Aug-Sep 2022
Issued: June 16, 2022



Seasonal Temperature Outlook

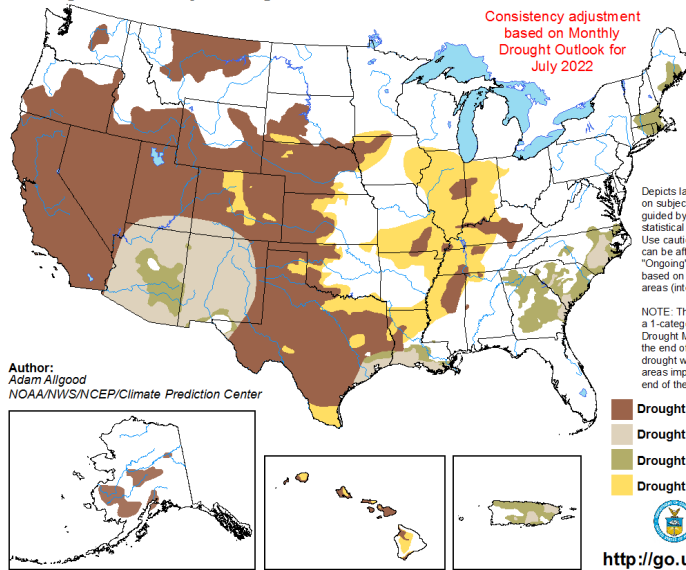
Valid: Jul-Aug-Sep 2022
Issued: June 16, 2022



U.S. Seasonal Drought Outlook

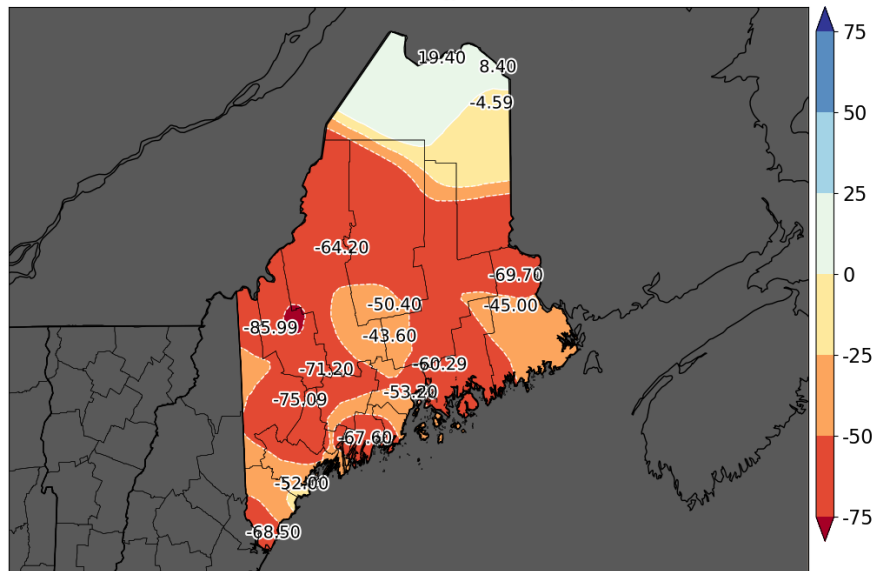
Drought Tendency During the Valid Period

Valid for July 1 - September 30, 2022
Released June 30, 2022



1 Oct 2020 thru 1 May 2022 Snowfall Departure [inch]

2020 is compared with NCEI 1991-2020 Climatology to compute departures



Generated at 8 Jul 2022 12:17 PM CDT in 18.48s

data units :: inch
IEM Autoplot App #97

(SNOWFALL DEPARTURE GRAPHIC IS ACCUMULATED DEFICITS FOR THE PAST 2 WINTERS)

Headwater Storage Levels

- **Presumpscot River** – The water level at Sebago Lake is 264.5 feet, 0.6 feet below the 19-year lake level average. Flow from Sebago Lake was increased to 408 cfs total to ensure dissolved oxygen (DO) targets are met in the Presumpscot River.
- **Androscoggin River** – The Androscoggin River basin is 84.7% full which is 1.8% above the long-term average. Rangeley Lake is down 0.27 feet with an outflow of 20 cfs, Mooselookmeguntic is down 1.63 feet with an outflow of 500 cfs, Richardson Lake is down 3.21 feet with an outflow of 600 cfs, Azischohos is down 4.33 feet with an outflow of 650 cfs, and Errol is down 2 feet with an outflow of 1,200 cfs. River flows remain stable, discharging 1,250 cfs at Gorham, 1,450 cfs at Rumford, and 2,000 cfs at Auburn.
- **Kennebec River** – The Kennebec River basin is 88.8% full, 3.4% above the long-term average for this time of the year. Brassua is down a total of 2.9 feet with an outflow of 400 cfs, while storage impoundments at Moosehead Lake are down 0.75 feet with an outflow of 1,420 cfs. Flagstaff Lake is down 1.55 feet with an outflow of 295 cfs. River flows remain relatively stable, discharging 2,000 cfs at Solon, 2,450 cfs at Madison and 2,499 cfs at Weston. Messalonskee lake has not maintained pond level above the required 234.9 feet since June 23rd, 2022, and outflow remains no more than 15 cfs.
- **Penobscot River** – Storage for the West Branch of the Penobscot is 43.60 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. East Branch flows are at their lowest levels since last fall.
- **Union River** – Graham Lake is currently down 1.67 feet from the long-term average elevation.
- **St. Croix River** – East Grand Lake is 70.39% full, 3.36% below the long-term average for this time of the year, and outflow is 160.7 cfs. West Grand is 70.89% full, 0.83% below the long-term average for this time of year, and outflow is 221 cfs. Vanceboro (Spednic) is 77.29% full, 1.9% above the long-term average for this time of year, and outflow is 659 cfs. Grand Falls is 78.2% full, while downstream flow is 1000 cfs.
- **Aroostook River** – Scopan lake is at 602.85 feet as of August 2nd, 2022.

Drought Impact Sectors

Public Water Suppliers

The Maine CDC Drinking Water Program (DWP) has received sporadic reports of low water quantity from public water suppliers in all areas of Maine except northern Penobscot and Piscataquis Counties and Aroostook County. The Stonington Water Company has issued mandatory water use restrictions and is currently augmenting its supply with water transported by tanker.

Private Well Owners

18 privately owned wells have reportedly run dry during this year; 8 dry wells are located in Cumberland County, 4 in York County, 4 in Kennebec County, 1 in Franklin County, and 1 in Lincoln County. Of these wells, 89% are residential. Maine homeowners with dry wells are encouraged to report this information to the Dry Well Survey and review assistance programs: <https://maine-dry-well-survey-maine.hub.arcgis.com/>. Mainers can dial 211 or 1-877-463-6207, or they can text a Maine zip code to 898-211 for assistance with filling out this survey.

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 and Environmental Conditions

Maine started the 2022 growing season with relatively good water conditions for planting. However, over the last 10 weeks, various parts of the state have experienced prolonged periods of moderate (D1) drought. Today, we are seeing the first week of severe (D2) drought in 8 counties along the coast from York County to Penobscot Bay.

For farmers that have invested in irrigation and soil health, crops are looking good. Drought has increased operating costs, particularly for labor and diesel fuel. For farmers who have not invested in irrigation, the outlook is for reduced quantity and quality of yields, and crop losses if the drought persists or intensifies.

First crops of hay were very good in most areas. However, subsequent hay growth has been stunted by drought in many areas, so second crops could be limited. This will create problems with hay supply for cattle farmers who rely on hay for feed over the fall and winter.

Oxford County SWCD has reported that a large-scale bee keeper observed that his bees were suffering from a severe loss of food source plants due to dry conditions, thereby requiring a nectar substitute for his bees. The Department has also heard from a Christmas tree farmer in Wells that hundreds of new seedlings are drying out, which will have implications for tree sales in future years.

Various Conservation Districts have reported that a lot of farmers are expressing concerns about drought and lack of rain. Everyone with irrigation is using it. In many areas, any cropland that isn't irrigated has done poorly. Corn has grown well on fields with good soil organic matter and moisture-holding capacity but has curled almost everywhere else due to dryness.

Washington County SWCD has reported that blueberry growers who have the water have been irrigating since June. Harvest started 2 weeks early in the western part of the county. The District noted that the development of irrigation ponds in the early 2000's, funded by State agricultural water bonds, have reduced stress on Atlantic salmon during low flows and continue to operate well.

Aroostook County has had adequate rainfall. Potato growth has been good, and most irrigation ponds have remained full. However, with recent hot weather, more irrigation is occurring and water levels are beginning to drop.

The Department will continue to monitor conditions and will be developing rules for the Farmers Drought Relief Program authorized by the Legislature this year. **The Program is not currently funded.** This Program is authorized to receive funds for any source (federal agencies, state appropriations, and other sources) to provide assistance with the development of new agricultural water sources. The Department's Agricultural Marketing Loan Fund (AMLF) can provide loans of up to \$250,000 at a 5% fixed interest rate for agricultural irrigation.

The Department encourages farmers to conserve water wherever possible. Farmers should contact their local USDA Farm Service Center to review possible federal sources of technical and financial assistance.

Southern Aroostook Soil & Water Conservation District is hosting the "Managing Irrigation for Crop Improvement, Soil Health, and Water Source Conservation Field Day" (August 10, Houlton). Register here: <https://bit.ly/3z4gHCq>

Currently there is no Secretarial Disaster Designation for drought in Maine and therefore farms are not eligible for low-interest FSA Emergency (EM) loans. A [Secretarial Disaster Designation](#) is triggered for severe drought, through a fast track process when a county meets the D2 (Severe Drought) drought level for eight consecutive weeks or a higher drought intensity value (D3 or greater) for any length of

time. In Maine, if D3 conditions are not met, farms in impacted areas are at least 8 weeks out from a designation.

Secretarial Disaster Designations immediately trigger the availability of low-interest FSA [Emergency \(EM\) loans](#) to eligible producers in all primary and contiguous counties impacted by drought. EM loan funds may be used to:

- Restore or replace essential property;
- Pay all or part of production costs associated with the disaster year;
- Pay essential family living expenses;
- Reorganize the farming operation; and
- Refinance certain debts.

Additional programs that may become available if drought conditions worsen include:

- [Livestock Forage Program \(LFP\)](#) - provides payments to livestock producers for grazing losses. Producers report their grazing acres to their local county office. Payments are based on the number of cattle, acres grazed and the severity of the drought. D2 triggers one month of payments, D3 triggers three months. Payment rates are established by the FSA National Office in Washington, DC.
- [Emergency Livestock Assistance Program \(ELAP\)](#) – provides financial assistance to livestock producers for losses resulting from the additional cost of transporting water to livestock due to an eligible drought. Payments are made on a per gallon amount hauled. Producers will need to provide supporting documentation showing the gallons of water hauled.
- [Emergency Conservation Program \(ECP\)](#) – provides cost share, up to 75% of the producers actual costs, to provide emergency water during periods of severe drought (specifically for grazing and confined livestock and for existing orchards and vineyards). Approved practices and measures may include:
 - installing pipelines or other facilities for livestock water or existing irrigation systems for orchards and vineyards
 - constructing and deepening wells for livestock water
 - developing springs or seeps for livestock water.
 - ECP can also be requested if the rainfall in the county is reduced by an average of 40% for 4 months. We are currently looking into this for some of the southern counties.

Wildfire Conditions

Comparison to previous years:

- **2022:** [533 fires have occurred as of August 4, 2022.](#)
- **2021:** 650 wildfires for the year. Maine started receiving rain in July to the end of the year to keep wildfires in check and occurrence low.
- **2020:** 1,154 wildfires for the year. Record high wildfire occurrence. Maine experienced drought conditions during this year. More people were at home due to COVID utilizing wildland fire to work around the home.

May report: May was a busy month for Maine Forest Service (MFS). The state was experiencing dry weather along with being prior to green up, (new grass and leaves out). By the end of May MFS had reported on 357 wildfires. Most were contained to under ¼ acres. One of significant was a fire in Amity resulting from a permitted burn that escaped the landowners control and burnt 20 acres. Another 41 acre wildfire is still under investigation. A railroad company started 4 wildfires along the tracks ranging from 1 acre to 5 acres. Debris burning continues to be the leading cause of wildfires escaping.

June report: After vegetation green up, wildfire activity slowed down. There were 58 additional wildfires in June statewide.

July report: July saw very little in precipitation. Wildfire activity increased. To date, 533 total wildfires occurred burning more than 351 acres. The surface fuels, grass leaves and small brush are drying out. Scattered and isolated rainfall is keeping the danger level at moderate, but if an ignition source is introduced, a wildfire could easily start due to the lack of moisture. Heavy short rainfall tends to runoff and not soak into the ground. There is an increase of roadside fires. Some were related to arson, but others were related to mechanical malfunctions. Lighting activity picked up in the south during the storm/wind events mid-month around the Sebago Lake area. On the last day of July there has been a wildfire in the Greenville area as the result of metal (track) on rock that sparked into an 8-acre fire. As the drought/dryness continues the larger fuels become more readily available to burn, the intensity of wildfires can increase, wildfires may burn deeper into the ground and are harder to extinguish. The expectation is for increase in wildfire activity as the drought continues.

Refer to the Maine Forest Service [Fire Weather](#) map for daily updates on regional fire danger classes.

Drought News

- Drought conditions fuel Maine wildfire: <https://www.necn.com/news/local/drought-conditions-fuel-maine-wildfire/2797253/>
- Persistent drought in Maine: <https://www.pressherald.com/2022/07/31/maine-has-another-month-of-well-below-average-rainfall-as-drought-persists/>
- Southern Maine farms impacted by drought: <https://wgme.com/news/local/we-are-praying-for-rain-rain-drought-hurting-some-southern-maine-farms>
- Maine DEP warns of impacts to surface waters from drought and irrigation practices <https://content.govdelivery.com/accounts/MEDEP/bulletins/3267d09>

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 conditions 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.nrcr.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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