

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

TO: Hydrologic Information Center, W/OS31
 NOAA's National Weather Service
 1325 East West Highway
 Silver Spring, MD 20910-3283

SIGNATURE
Robert W. Megnia
Meteorologist

DATE
September 3rd 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.

....Drought conditions continue and worsen for portions of southern New England

August 2022 liquid equivalent precipitation varied greatly across southern New England. The northern tier of MA, Cape, Islands, and immediate South Coast received between 1 and 3 inches of rainfall which is about 2 to 3 inches below normal. Areas across the interior saw substantially higher rainfall of 3 to 4 inches. These areas were only about an inch below normal. Portions of northeast CT and southeastern MA received greater than 6 inches which was 1 to 2 inches above normal. August temperatures were substantially above normal with nearly the entire region averaging temperature departures of 4+ degrees.

No freshwater flooding occurred within NWS Boston/Norton's Hydrologic Service Area. More details for major climate sites in southern New England are included in Table 1. In addition to precipitation details, temperature departures from normal are provided.

<i>Location</i>	<i>August Precipitation (Inches)</i>	<i>Precipitation Departure from Normal (Inches)</i>	<i>Temperature Departure from Normal (Degrees F)</i>	<i>Warmest August on Record Ranking</i>
<i>Boston</i>	1.47	-1.76	4.0	3
<i>Worcester</i>	2.56	-1.58	4.5	1
<i>Providence</i>	1.69	-1.9	4.0	1
<i>Hartford</i>	5.08	0.87	4.3	1

Table 1. August 2022 precipitation and departure from normal, temperature departure from normal, and where August 2022 ranks in terms of warmth based on climate site history. Details are for major climate sites within southern New England. Information is preliminary.

Drought Conditions Worsen Across Southern New England

Below normal precipitation across most of southern New England during the month of August resulted in a continuation of below to much below normal stream flows for many streams and rivers across southern New England. In addition to low stream flows, the lack of precipitation in southern New England resulted in below normal soil moisture and below normal ground water at several ground water wells across RI, MA and CT. These dry conditions combined with substantial 60 and 90 day precipitation deficits led to nearly all of southern New England rising to D2: severe drought on the US Drought Monitor on August 30th. Portions of northeastern

RI, southern RI, the south coast of MA, eastern MA, and northeastern MA rose to D3: Extreme drought. A small portion of southern New England on the south shore remained at D1 moderate drought after this area saw beneficial rains toward the end of the month. August 30th USDM is depicted in Map 3.

State Drought Declarations

RI:

The RI Water Resources Board held a Drought Steering Committee meeting on August 9th. Based on recommendations from the DSC, [Governor Dan McKee issued a Statewide Drought Advisory](#) (also on the 9th). A drought advisory is declared when any 3 of the following criteria are met.

- Precipitation: two months below 65% of normal rainfall
- Ground Water: two out of three months below normal levels
- Stream Flow: three consecutive months below normal
- Palmer Drought Index: -2.0 to -2.99

MA:

On August 23rd 2022, the MA Drought Management Task Force convened to provide drought declaration recommendations to The MA Secretary of Energy and Environmental Affairs (EEA). On August 24th, Energy and Environmental Affairs (EEA) Secretary Bethany Card announced that conditions had deteriorated across MA with drought conditions expanding south and westward. She declared that the Cape Cod Region had joined the Connecticut River Valley, Southeast, Northeast, and Central Regions as a Level 3-Critical Drought. Additionally, the Islands and Western Regions were elevated to a Level 2-Significant Drought. The August 2022 Hydrologic Conditions Report for MA can be accessed via this link <https://www.mass.gov/doc/2022-August-hydrologic-conditions/download>. Map 1 further depicts the Drought Regions in MA and with the associated Drought Level. According to EEA and the Massachusetts Drought Management Plan, a Level 3-Critical Drought leads to increased reliance on mandatory conservation measures, an expansion of coordination efforts to include neighboring states, and beginning preparations for emergency conditions. Details from MA Drought Management Task Force meetings are available at this link: <https://www.mass.gov/service-details/drought-management-task-force-meetings>

CT:

The Connecticut Interagency Drought Workgroup (IDW) convened on *August 18th* to assess conditions in the State. A Stage 3 notice is now in effect for Windham and New London Counties. Elsewhere in CT conditions remain at Stage 2. “Stage 3” in [Connecticut’s Drought Preparedness and Response Plan](#) is guided by the following criteria

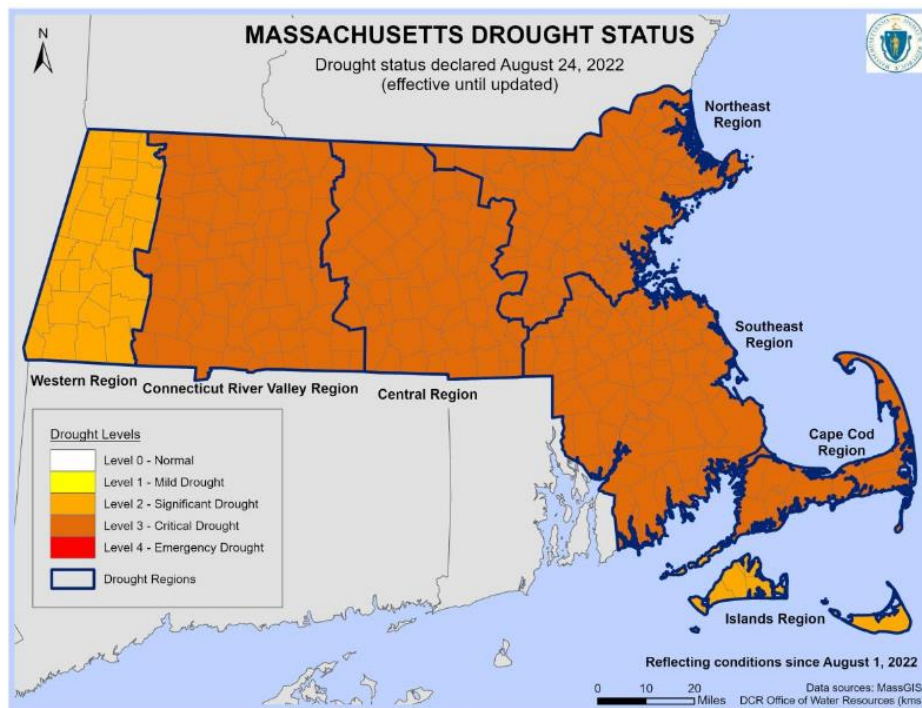
- Precipitation - Three-month total below 65% of average
- Groundwater - Four consecutive months below the 25th percentile
- Streamflow - Four out of five months below the 25th percentile
- Reservoirs - Average levels less than 70% of normal
- Palmer Drought Severity Index - -3.0 to -3.99
- Crop Moisture Index - -2.0 to -2.99, excessively dry
- VegDRI - (seasonal) Moderate drought conditions
- Fire Danger - High

- U.S. Drought Monitor Intensity level - D2-D3

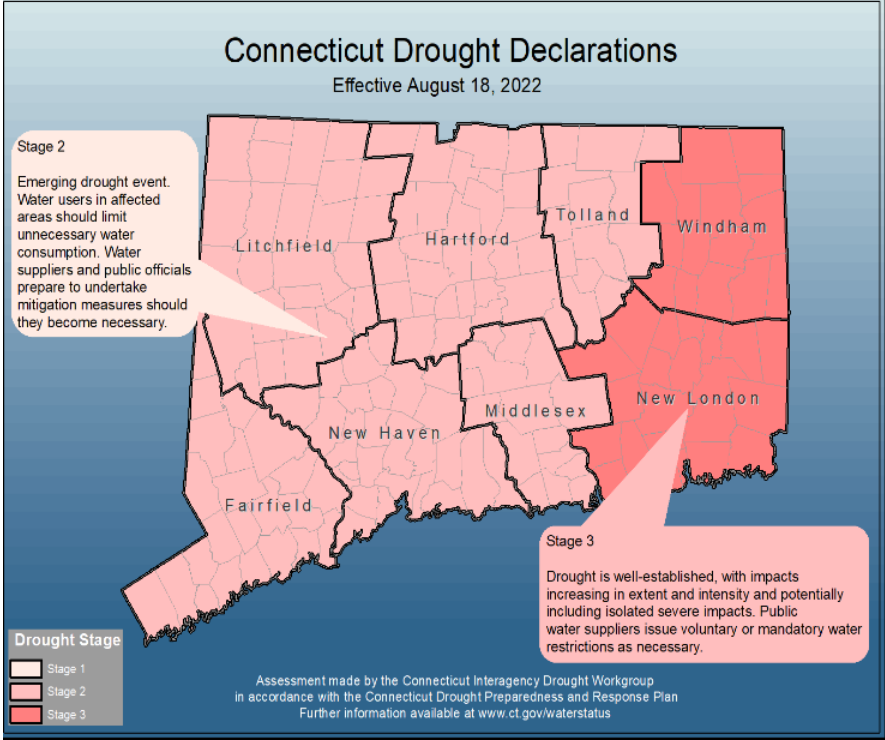
Map 2 further depicts the drought areas in CT. More details are available at the [Connecticut Drought Information Center](#).

Streamflow and Groundwater

Nearly 70% of USGS stream gages in southern New England were running below to much below normal for this time of year. 10% of gages were at an all-time low. A handful of gages across southeastern MA and RI were at normal levels. Most ground water wells across southern New England were below to much below normal. Only a handful of ground water wells were at normal levels at various locations across MA, CT, and RI.



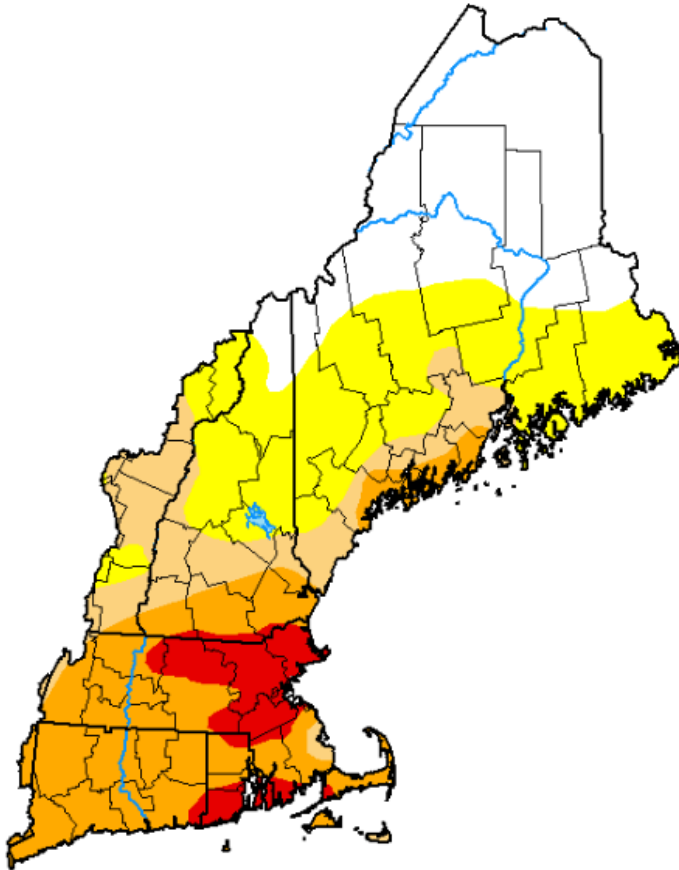
Map 1: Massachusetts Drought Status for August 2022, retroactive to August 1st. Map from the MA Department of Conservation and Recreation, Office of Water Resources.



Map 2: Connecticut Drought Status as of August 18th, 2022.

U.S. Drought Monitor New England Watershed

August 30, 2022
(Released Thursday, Sep. 1, 2022)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	29.11	70.89	41.94	28.82	6.72	0.00
Last Week 08-23-2022	29.11	70.89	46.49	30.64	8.43	0.00
3 Months Ago 05-31-2022	69.87	30.13	9.15	0.00	0.00	0.00
Start of Calendar Year 01-04-2022	81.86	18.14	6.91	2.88	0.00	0.00
Start of Water Year 09-28-2021	76.65	23.35	8.91	2.70	0.00	0.00
One Year Ago 08-31-2021	52.13	47.87	32.18	5.21	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme 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>

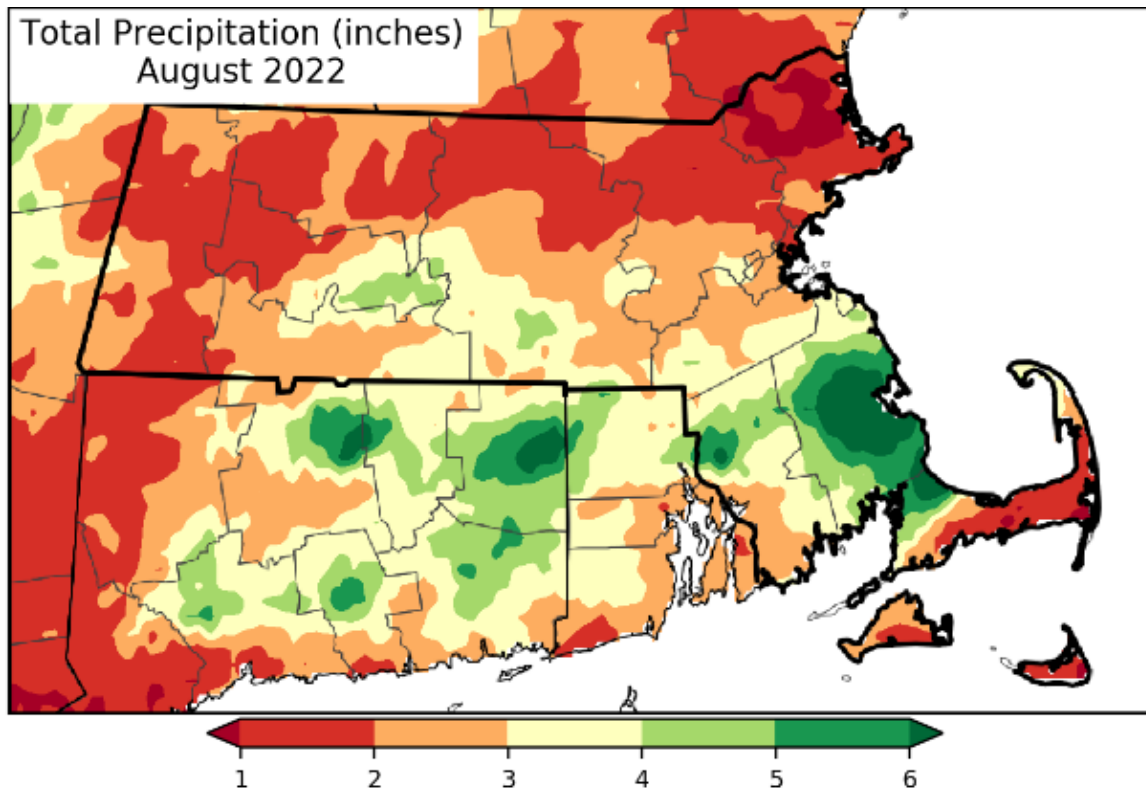
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National Drought Mitigation Center

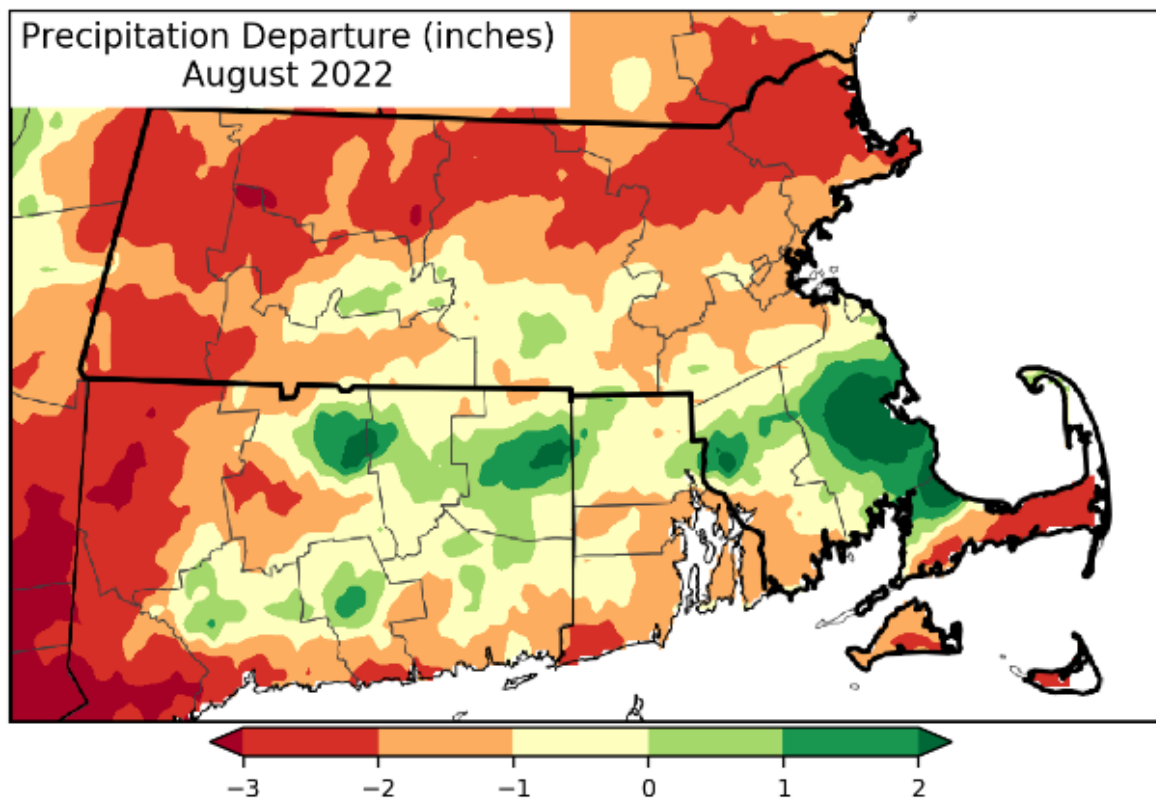


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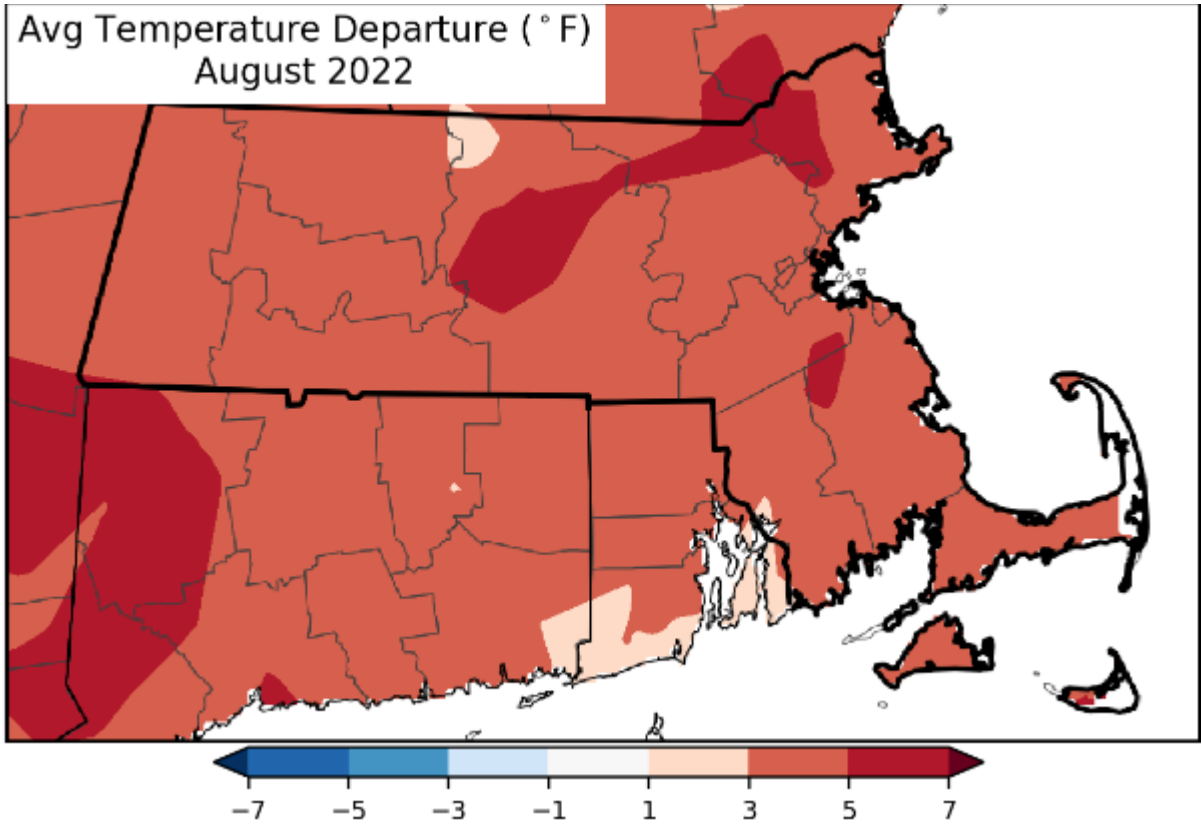
Map 3: US Drought Monitor New England from August 30th



Map 4: August 2022 liquid equivalent precipitation for southern New England. From the Northeast Regional Climate Center.



Map 5. August 2022 precipitation departure from normal for southern New England. From the Northeast Regional Climate Center.



Map 6. Average temperature departure from normal across southern New England for August 2022.
From the Northeast Regional Climate Center.