

Connecticut Drought Conditions Report

Interim Update
August 18, 2022

Connecticut Water Planning Council
Interagency Drought Workgroup
Special Meeting

Summary:

Since the Interagency Drought Workgroup last met on August 4, all of Connecticut has continued to experience below normal rainfall. Long-term precipitation deficits are most severe in Windham, Middlesex, and New London counties, with average precipitation in those areas at 60-65% of normal over the past 6 months, compared to 75-80% in the rest of the state. 2-month precipitation totals are lowest in New London and Middlesex counties at around 30% of normal, with all other counties around 50% of normal. Litchfield and Fairfield counties had been enjoying some relief earlier in the summer, but those areas are now emerging as areas of concern for short-term precipitation totals.

Streamflow and groundwater monitoring sites continue to be in decline across the state, and some sites at record daily lows and approaching all-time record lows. Sites in eastern Connecticut (Windham, New London, Middlesex counties) are generally worse than the rest of the state.

Reservoir levels are averaging 82.2% of capacity statewide, but status varies widely depending on the system and fluctuations in demand. Several systems have enacted voluntary or mandatory water use restrictions.

Short-term indicators, such as Crop Moisture Index and Vegetation Drought Response Index, are showing severely dry conditions and substantial vegetation stress, with the worst impacts being centered over New London county. Fire danger fluctuates day to day depending on numerous factors including where convective precipitation develops and falls, but in general has fluctuated among High, Very High, and Extreme, with portions of New London, Middlesex, and Windham counties in the Extreme category.

The United States Drought Monitor released its weekly update this morning and increased the drought severity level in every county, introducing D3 (Extreme Drought) in eastern Windham and New London counties, expanding D2 (Severe Drought) across Tolland, Middlesex, Hartford, and Litchfield counties, and expanding D1 (Moderate Drought) in New Haven and Fairfield counties.



CT Interagency Drought Workgroup NWS Update

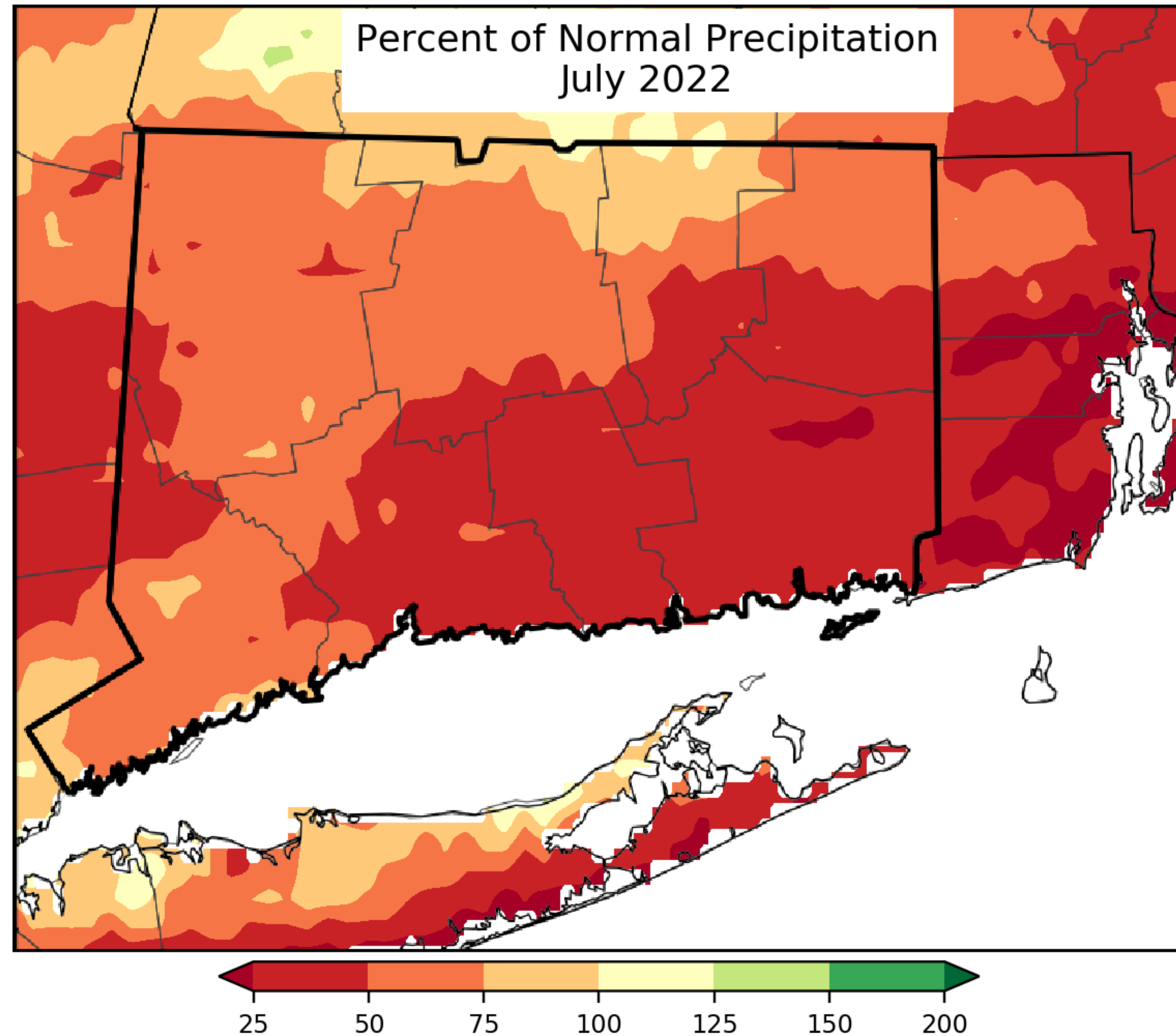
Thursday August 18th 2022

Prepared by: NWS WFO Boston/Norton, MA

July Recap- Percent of normal rainfall



Boston/Norton MA
WEATHER FORECAST OFFICE



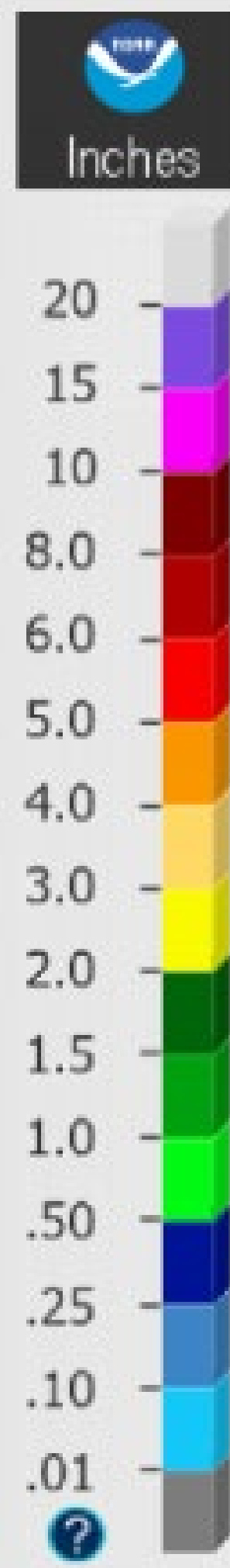
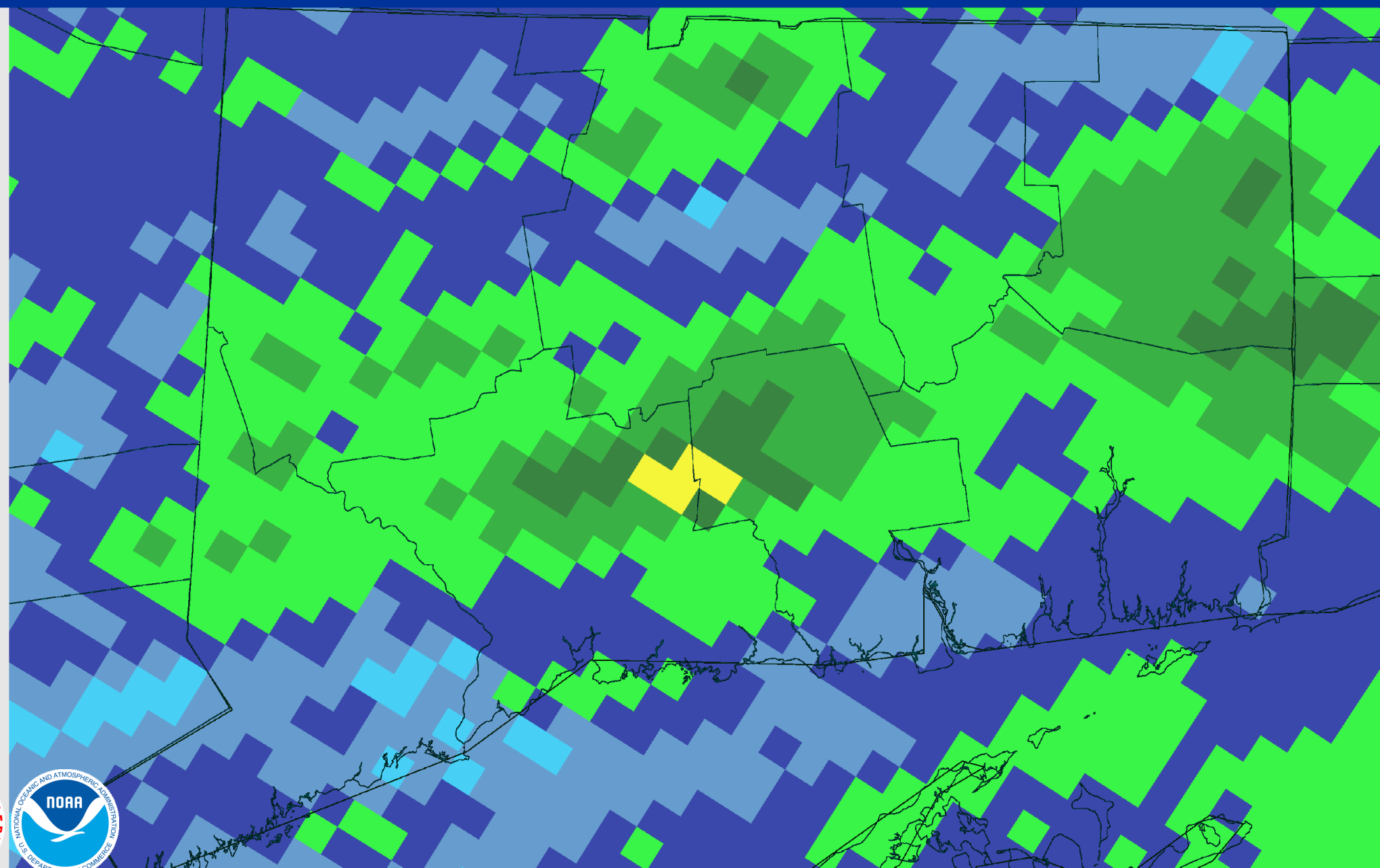
August 1-17 Rainfall & Percent Normal



Boston/Norton MA
WEATHER FORECAST OFFICE

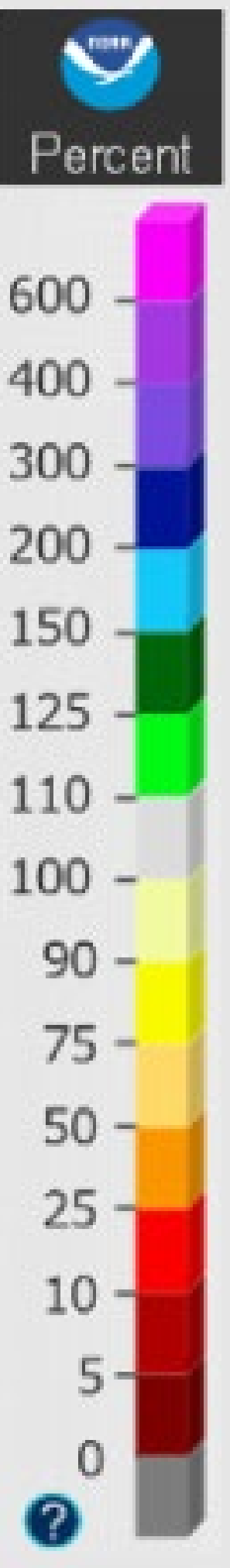
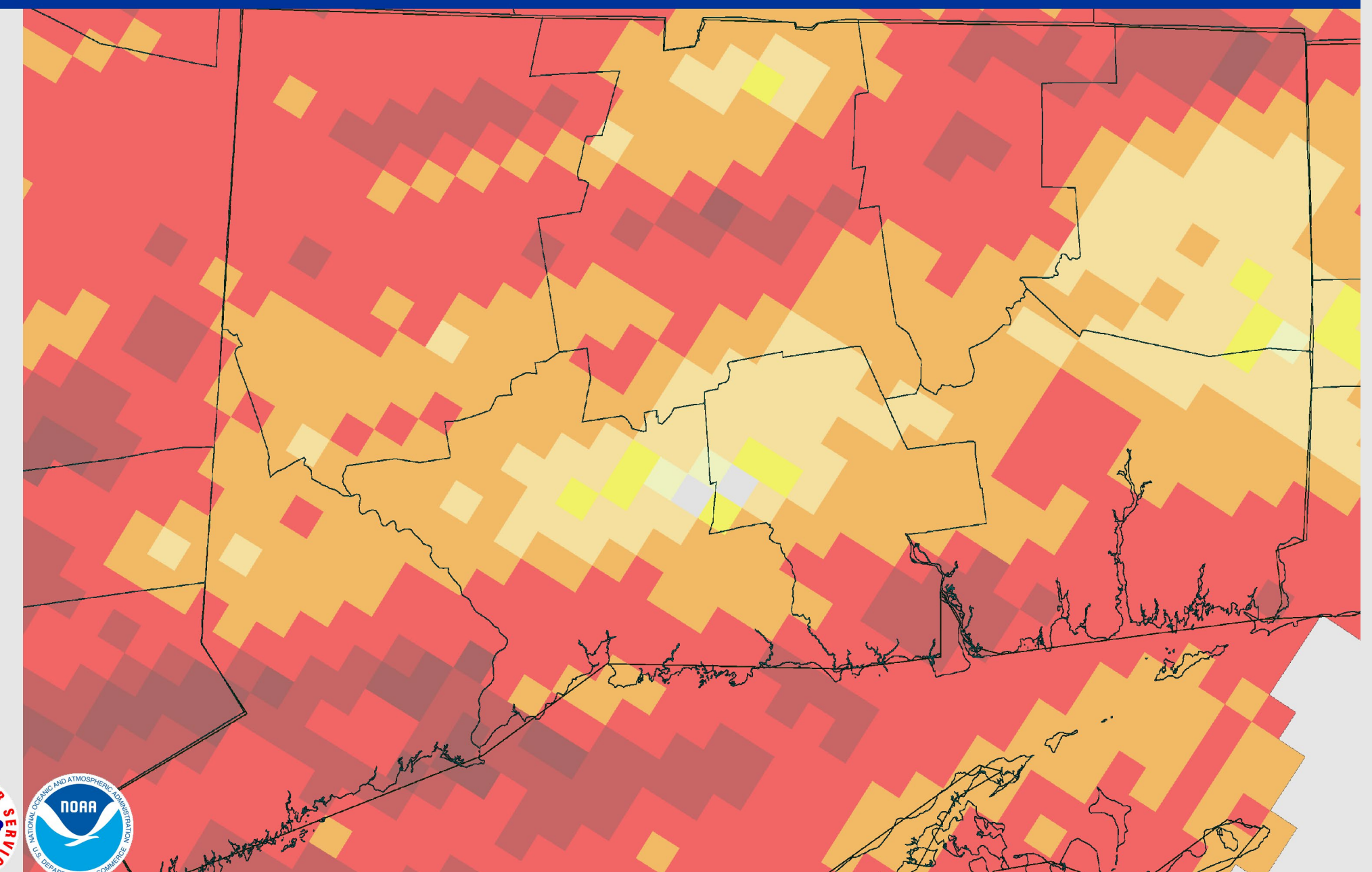
August 17, 2022 Month to Date Observed Precipitation

Created on: August 17, 2022 - 17:39 UTC
Valid on: August 17, 2022 12:00 UTC



August 17, 2022 Month to Date Percent Precipitation

Created on: August 17, 2022 - 17:39 UTC
Valid on: August 17, 2022 12:00 UTC



Locations in Blue- less than 0.5 inch MTD

Locations in Green- mainly 0.5 to 1.5 inch MTD

*Normal MTD is ~2.25 to 2.5 inches

Locations in Brown- 25-50% of normal MTD

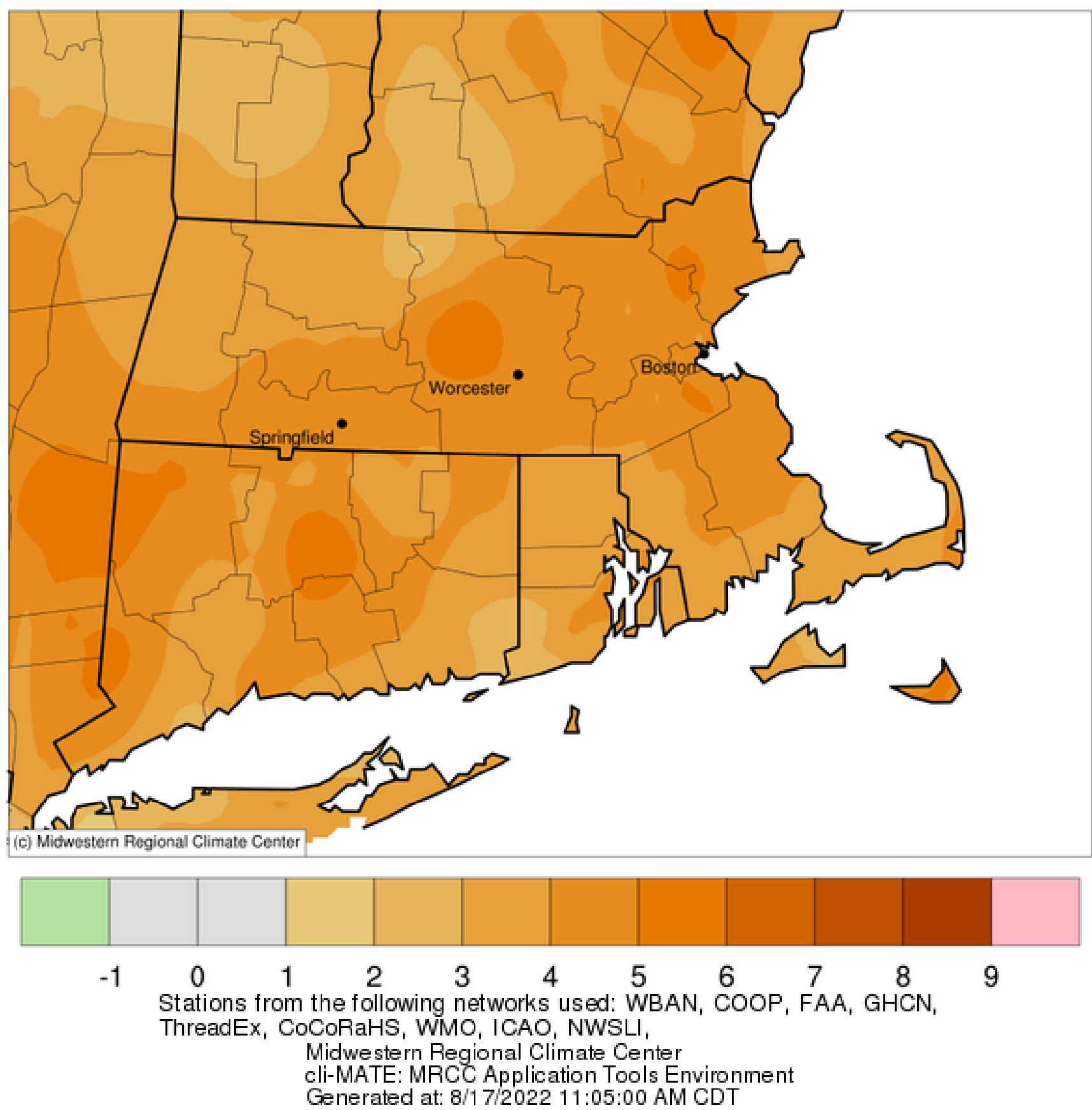
Locations in Red- less than 50% of normal MTD

August MTD Temperature Departure



Boston/Norton MA
WEATHER FORECAST OFFICE

Average Temperature (°F): Departure from 1991-2020 Normals
August 01, 2022 to August 17, 2022



CT: Temperatures have averaged 3 to 6
degrees above normal month-to-date

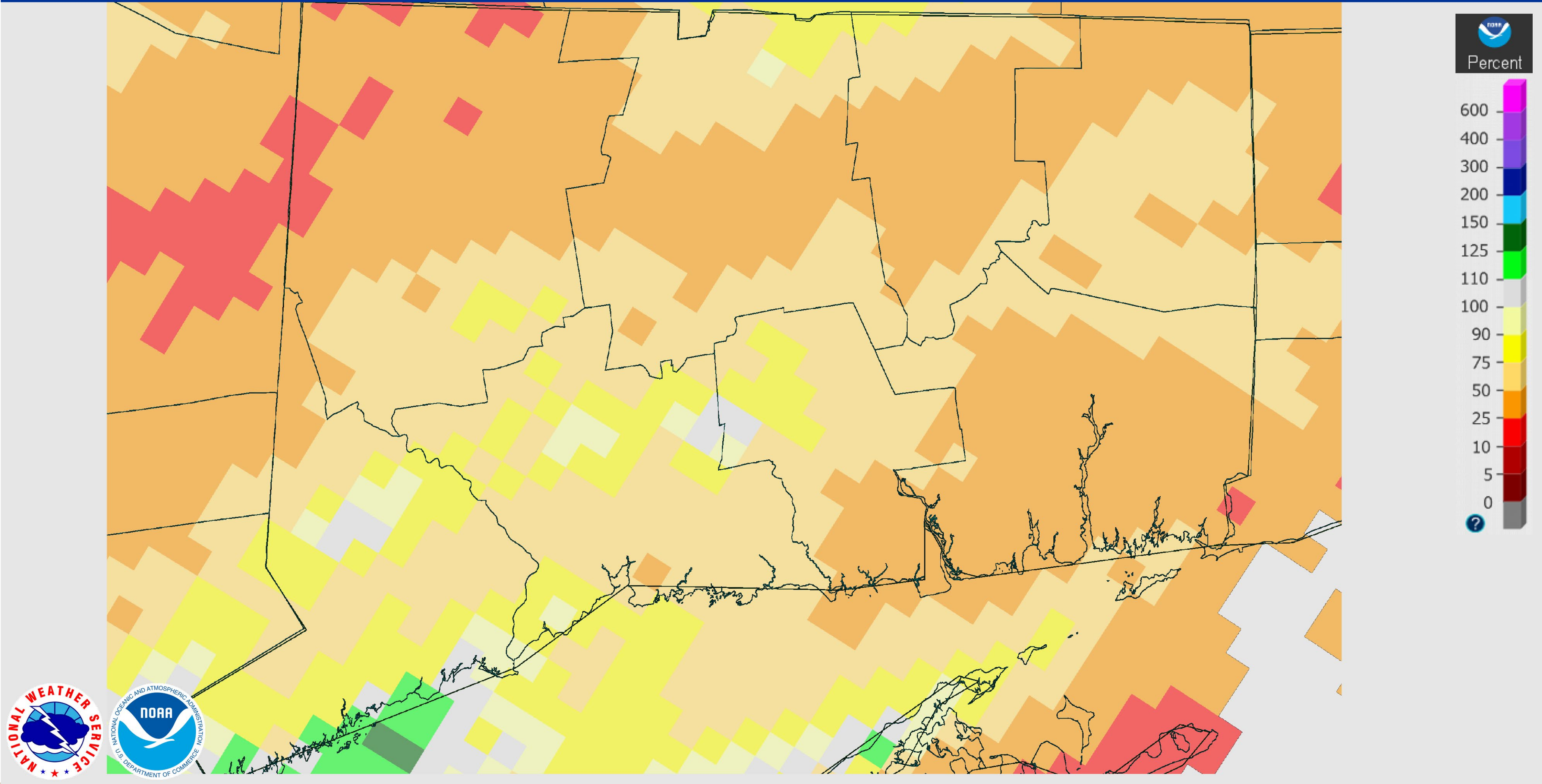
30-Day Percent of Normal Rain



Boston/Norton MA
WEATHER FORECAST OFFICE

August 17, 2022 30-Day Percent Precipitation

Created on: August 17, 2022 - 17:41 UTC
Valid on: August 17, 2022 12:00 UTC



60-Day Percent of Normal Rain

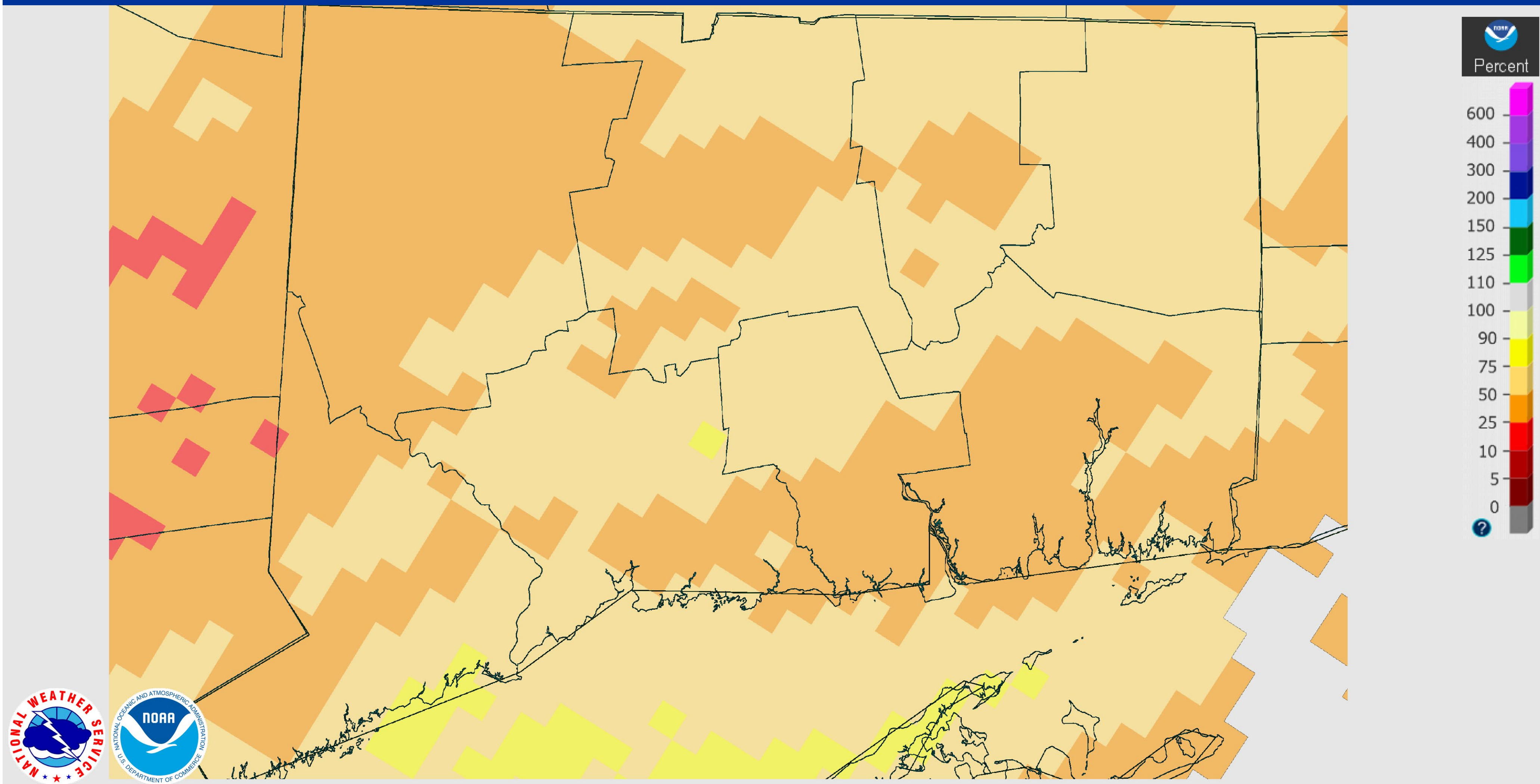


Boston/Norton MA
WEATHER FORECAST OFFICE

August 17, 2022 60-Day Percent Precipitation

Created on: August 17, 2022 - 17:42 UTC

Valid on: August 17, 2022 12:00 UTC



90-Day Percent of Normal Rain

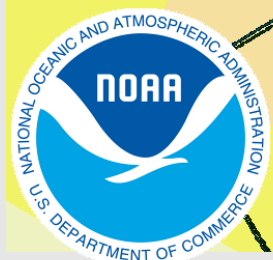
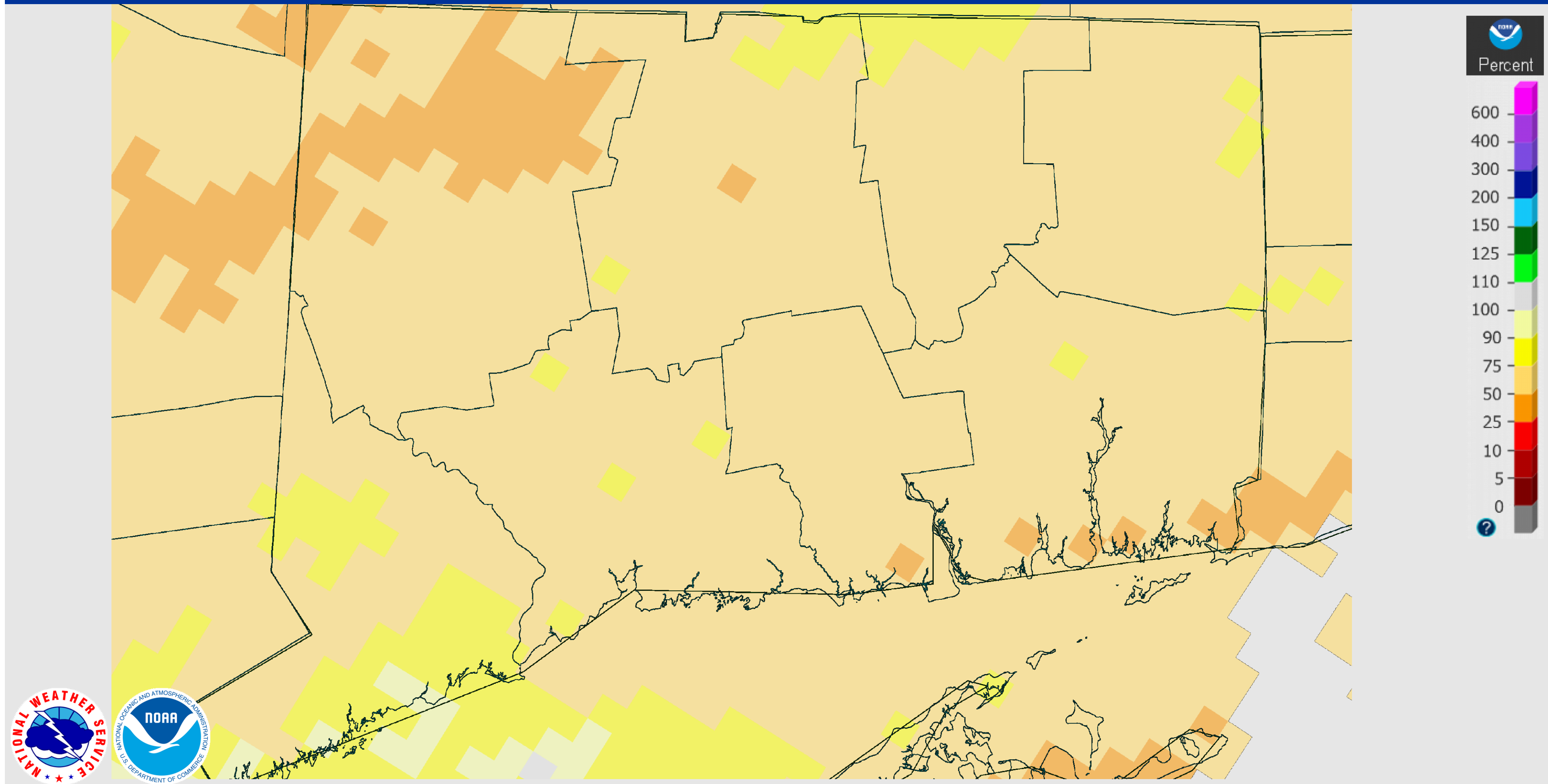


Boston/Norton MA
WEATHER FORECAST OFFICE

August 17, 2022 90-Day Percent Precipitation

Created on: August 17, 2022 - 17:44 UTC

Valid on: August 17, 2022 12:00 UTC





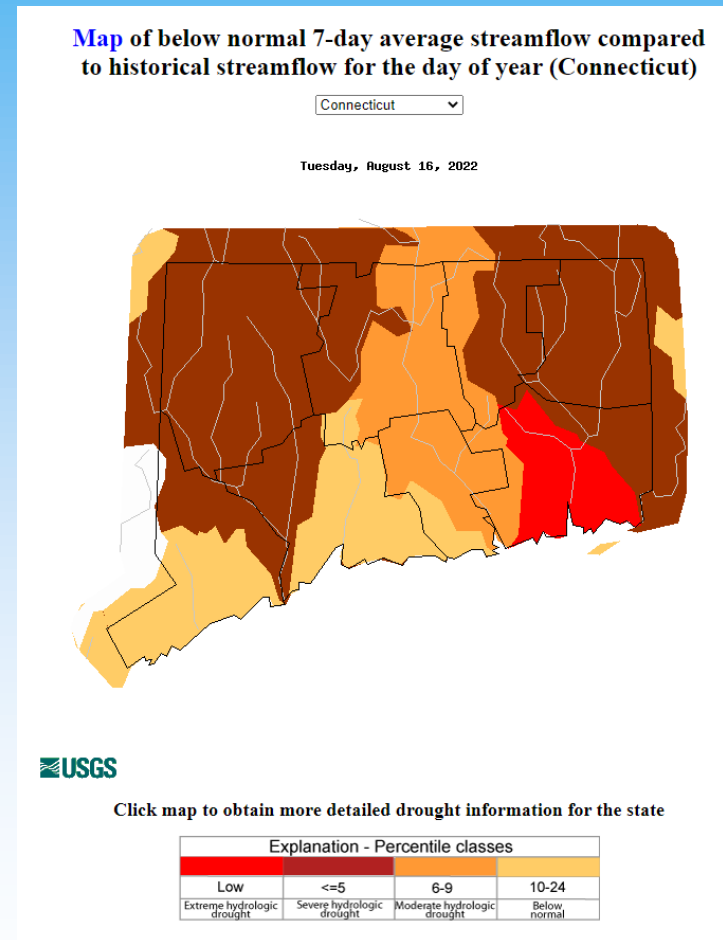
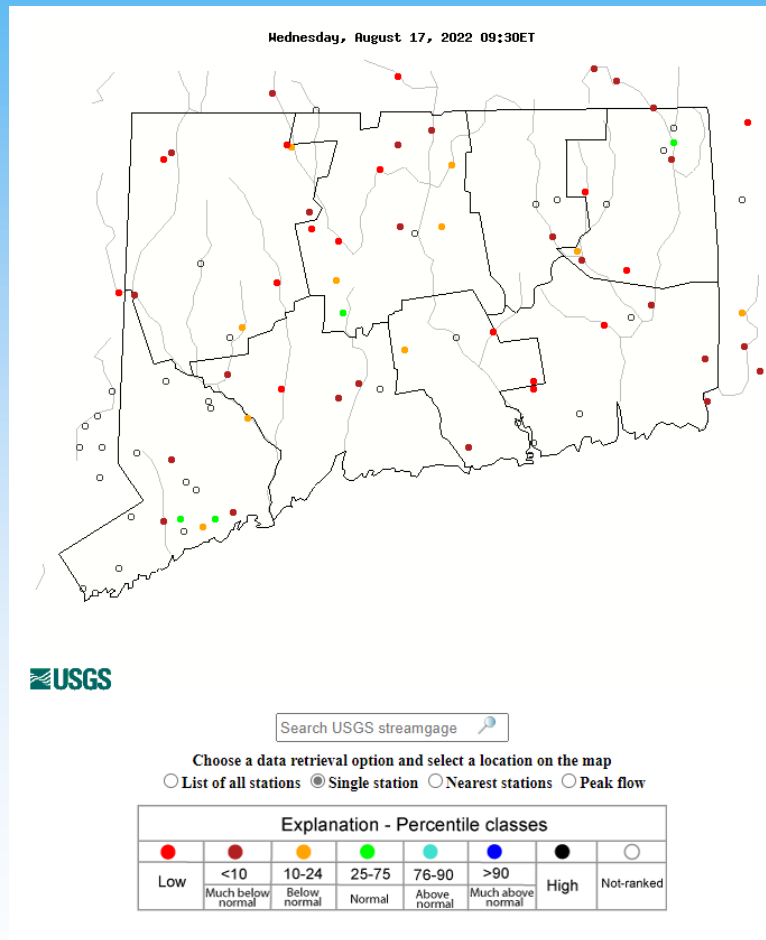
U.S. Geological Survey

**Status of streamflow
and groundwater levels,
as of August 16, 2022**



Provisional data, subject to review and revision

Streamflow Conditions 8/17/22

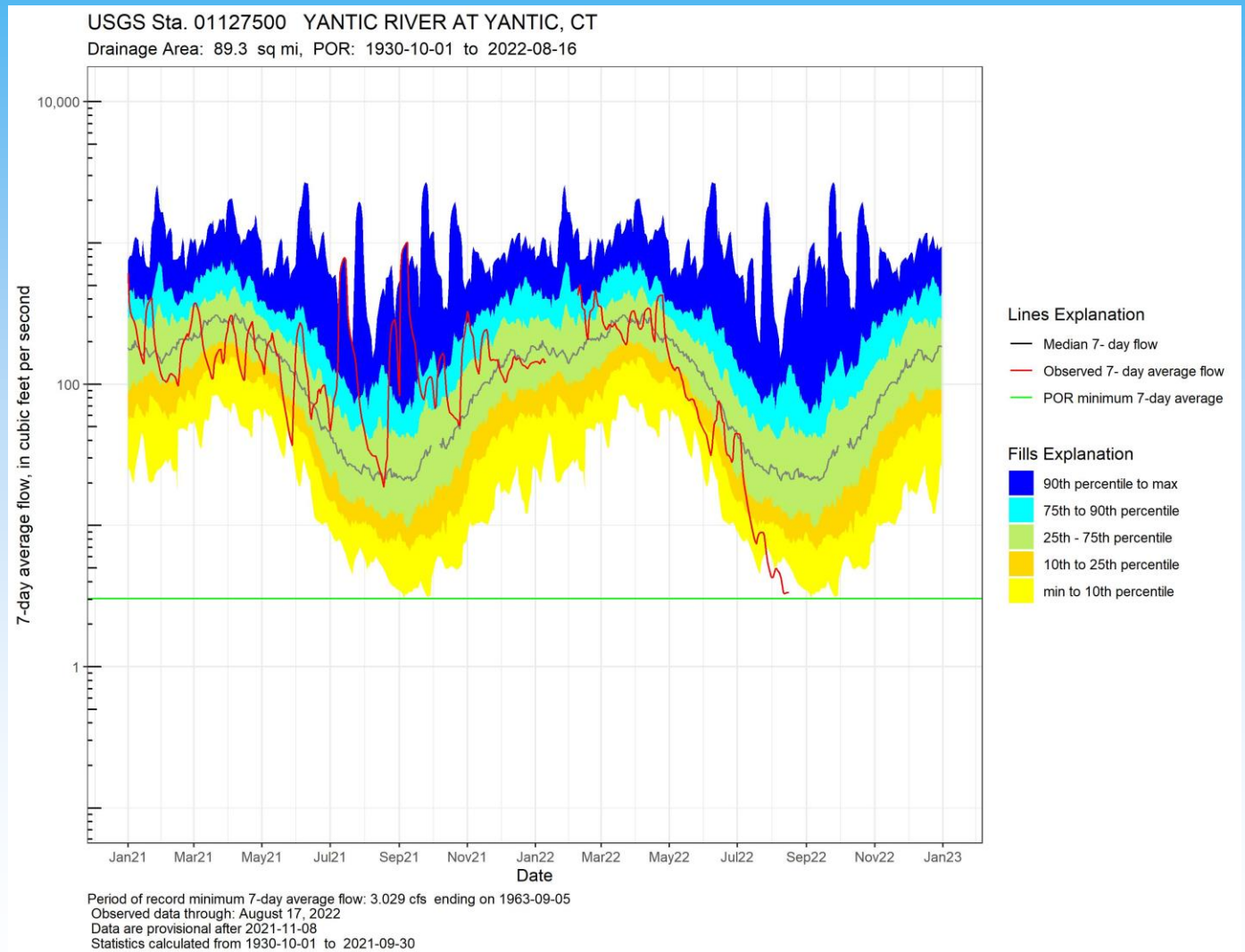


Provisional data, subject to review and revision

Examples from Different Regions

7-day Average Flows

New
London
County
Yantic R.

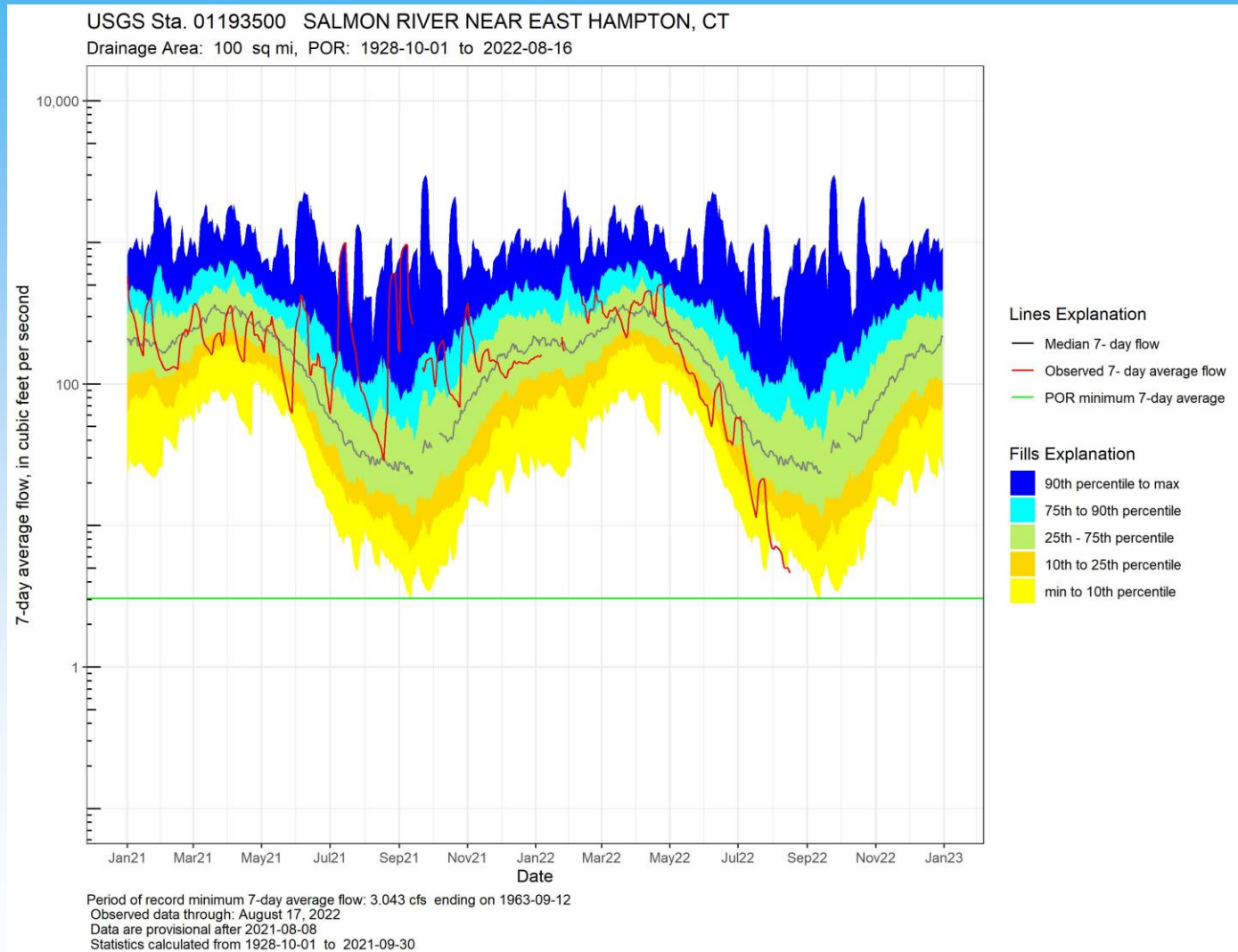


Provisional data, subject to review and revision

Examples from Different Regions

7-day Average Flows

Middlesex
County
Salmon R.

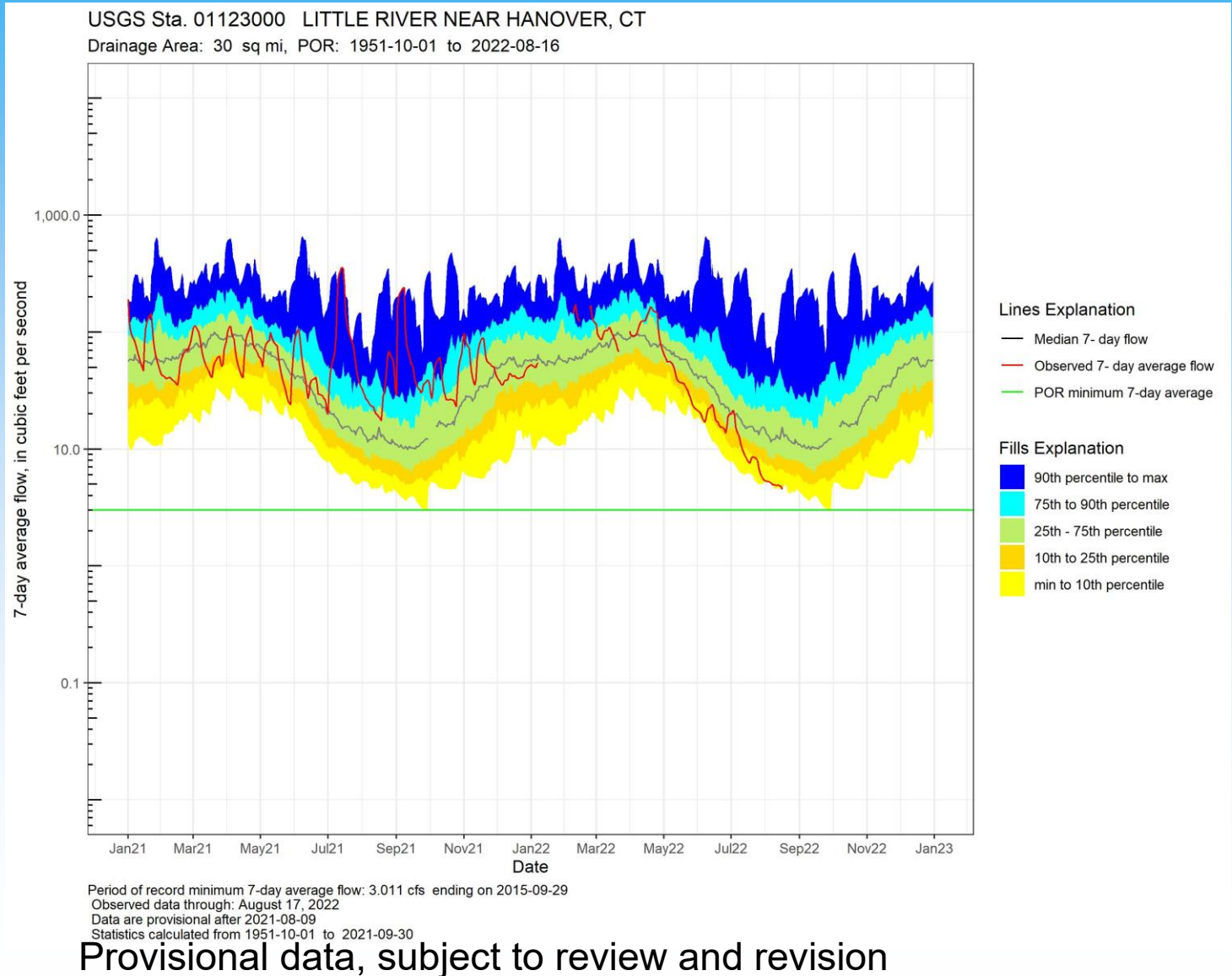


Provisional data, subject to review and revision

Examples from Different Regions

7-day Average Flows

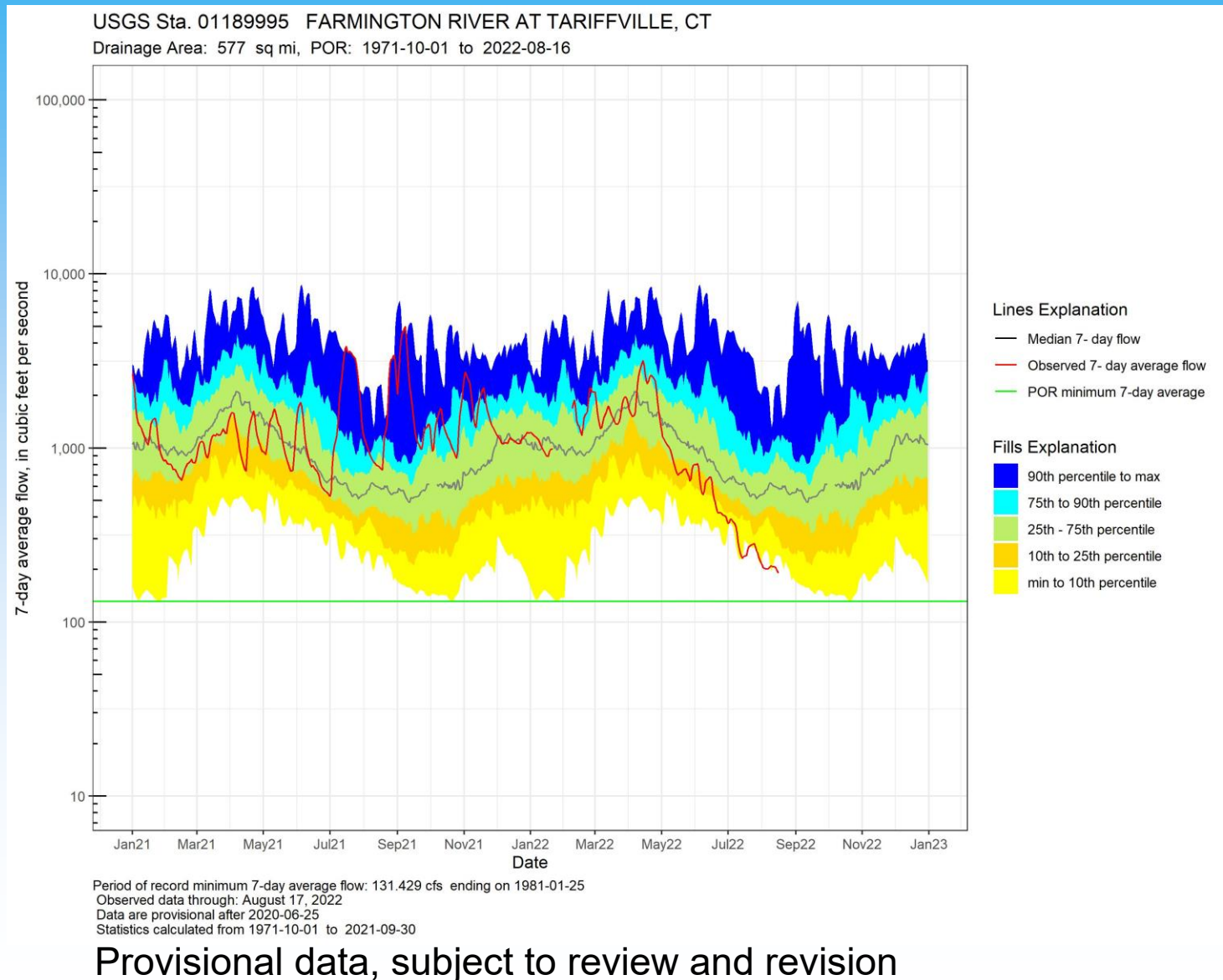
Windham
County
Little River
nr Hanover



Examples from Different Regions

7-day Average Flows

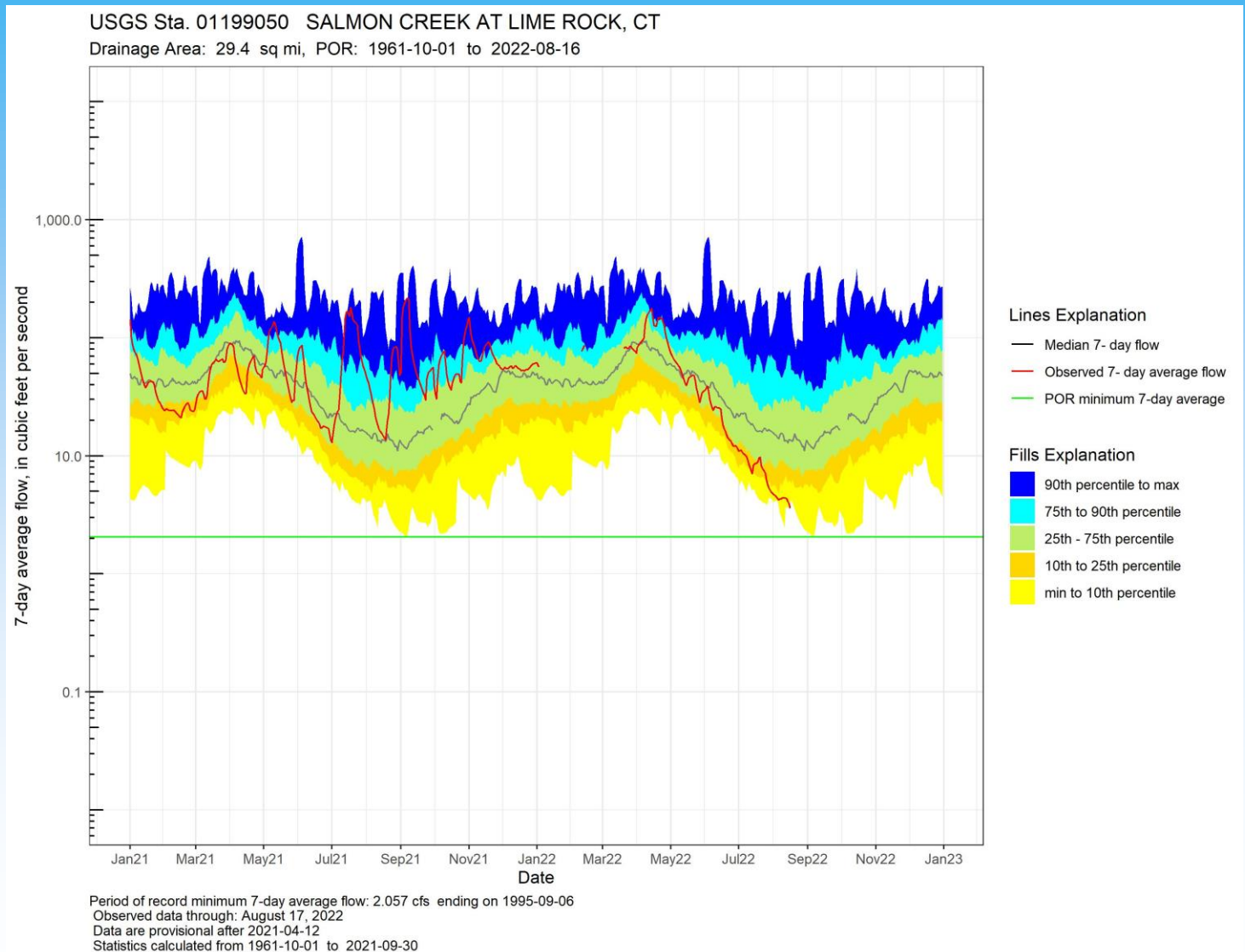
Hartford
County
Farmington
R.



Examples from Different Regions

7-day Average Flows

Litchfield
County
Salmon
Creek at
Lime Rock

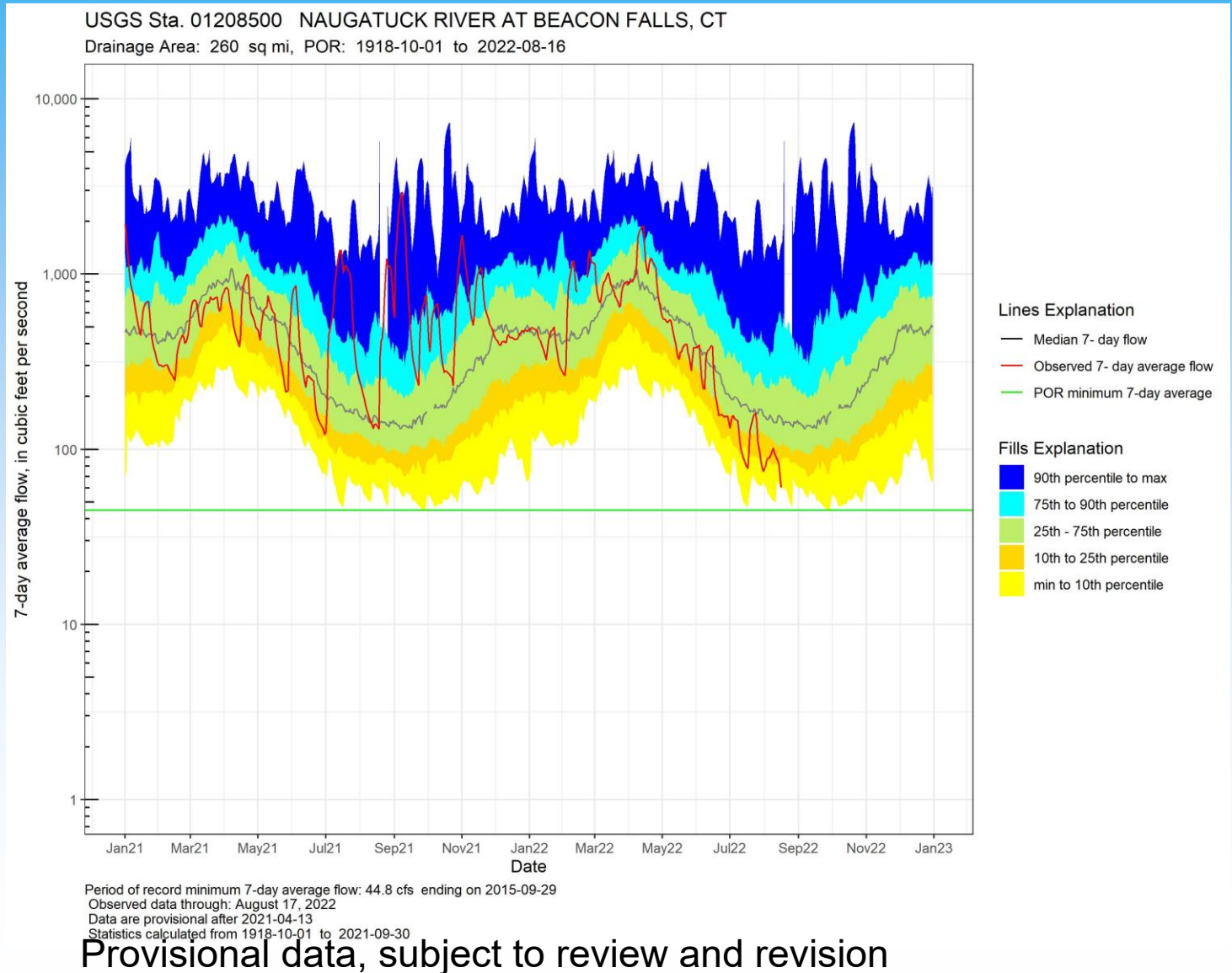


Provisional data, subject to review and revision

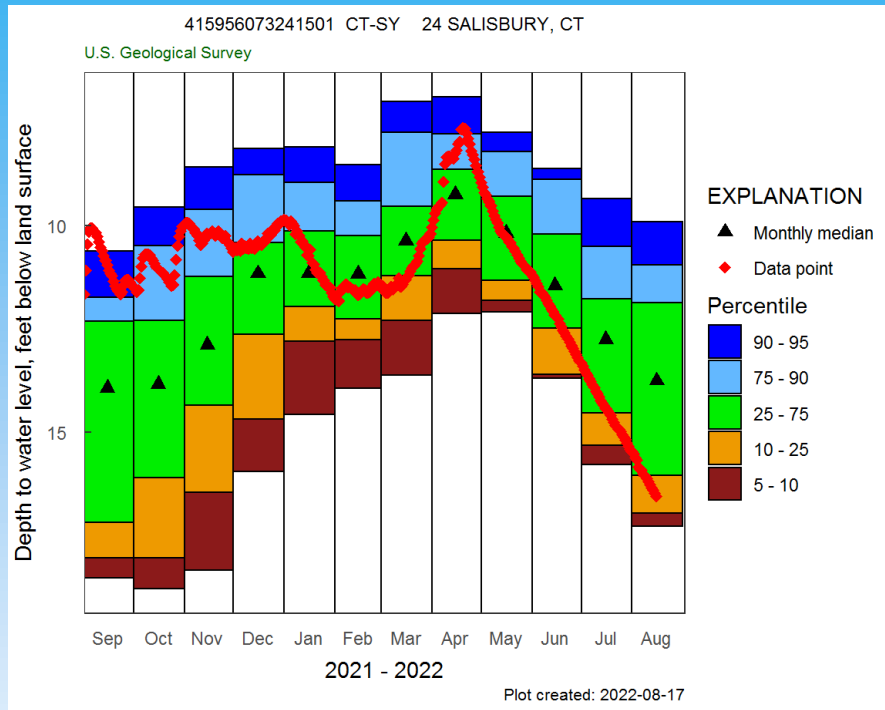
Examples from Different Regions

7-day Average Flows

New Haven
County
Naugatuck
R.



Groundwater Levels, Salisbury



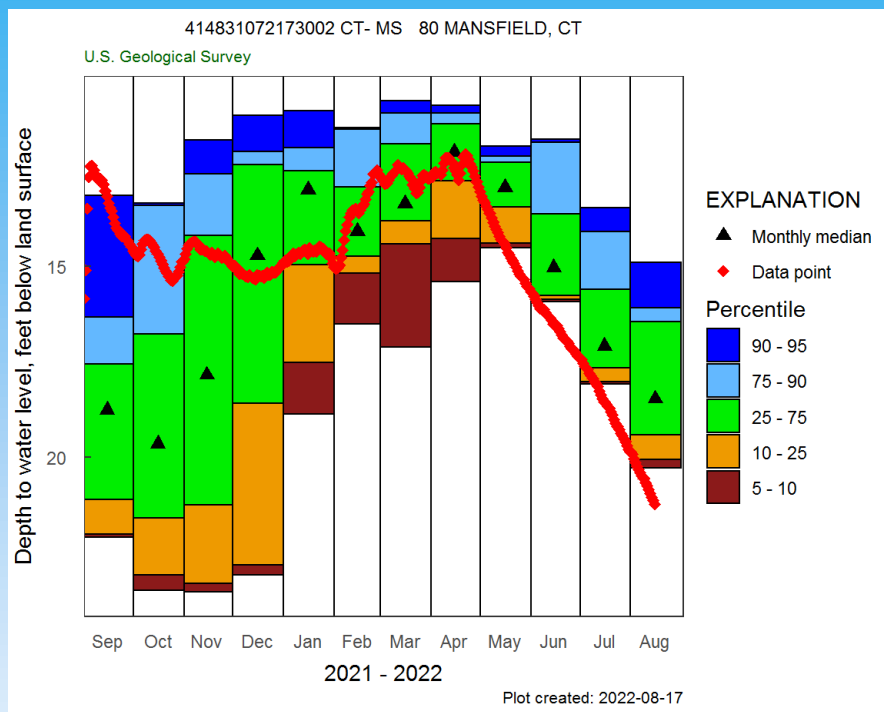
Aquifer: Stratified Drift

Most recent	Percentile	Lowest Median For Aug.	Record low	Date for record low
16.54 ft	10 - 25	17.40	20.00	2016-10-21



Provisional data, subject to review and revision

Groundwater Levels, Mansfield



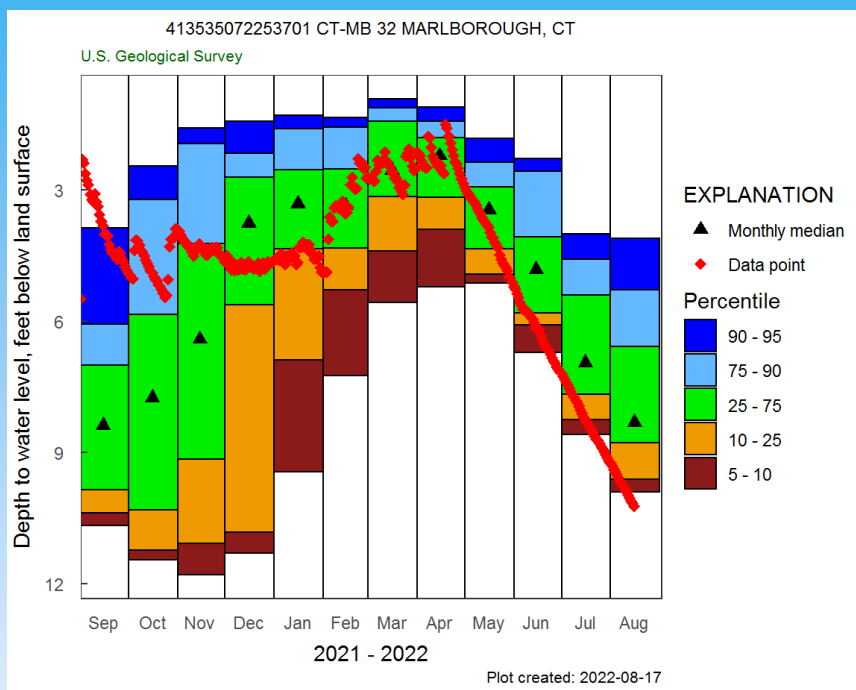
Aquifer: Bedrock

Most recent	Percentile	Lowest Median For Aug.	Record low	Date for record low
21.23 ft	<5	20.28	23.67	2007-11-06



Provisional data, subject to review and revision

Groundwater Levels, Marlborough



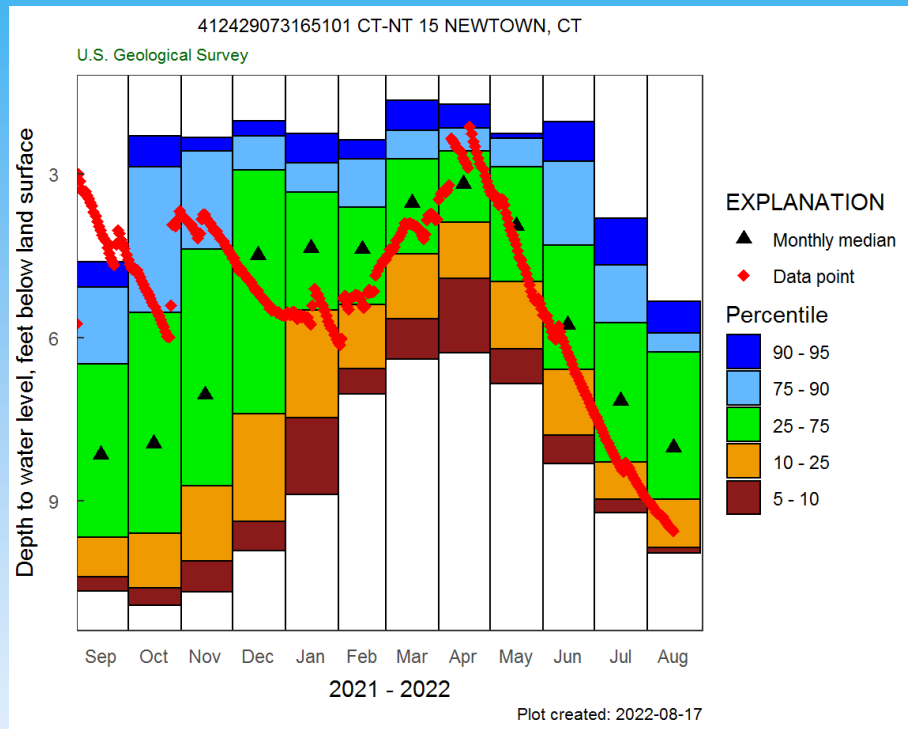
Aquifer: Till

Most recent	Percentile	Lowest Median For Aug.	Record low	Date for record low
10.23	<5	10.02	12.55	11-28-2016



Provisional data, subject to review and revision

Groundwater Levels, Newtown



Aquifer: Stratified Drift

Most recent	Percentile	Lowest Median For Aug.	Record low	Date for record low
9.55	10 - 25	10.20	11.66	2016-11-15



Provisional data, subject to review and revision

Surface Reservoir Capacity Measurements and Trends

8/12/2022 Update

USDM Expands Drought Classifications Across CT!

Thirty-four surface water systems measure their reservoir capacities weekly and report the readings to the Drinking Water Section (DWS). The attached table summarizes the most recent measurements in percent full and shows the week-to-week trend of their capacities.

Key takeaways:

$\geq 100\%$ of Normal n=34

13

Change since last week:

+1

State Average

82.2 %

Last week:

84.5%

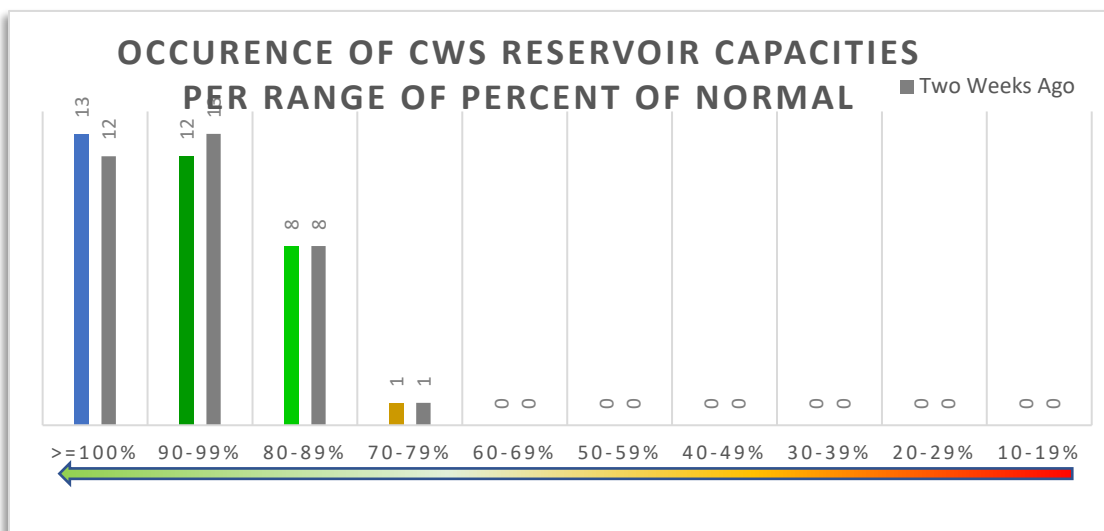
Average Percent of Normal

95.3%

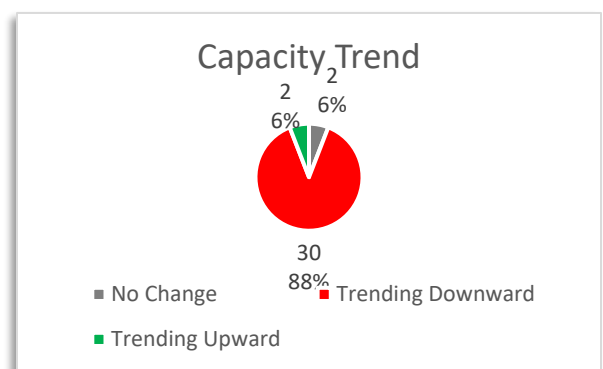
Last week:

94.3%

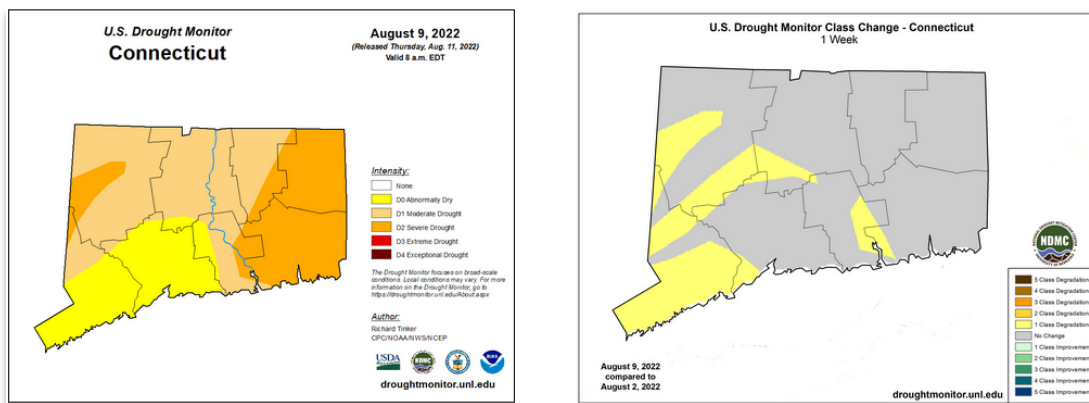
- 3 reservoir systems have reported that they are currently at 100% full (No change since last week).



- The gray bars indicate last week's measurements. Under normal capacities, the graph above would have all of the systems in the $\geq 100\%$ of normal column (n=34).
- 2 system's short-term week to week trend is upward (-1 since last week).** 30 systems are trending downward in capacity from their previous measurements (-3 since last week). 2 systems have had no change in capacity (-2 since last week).

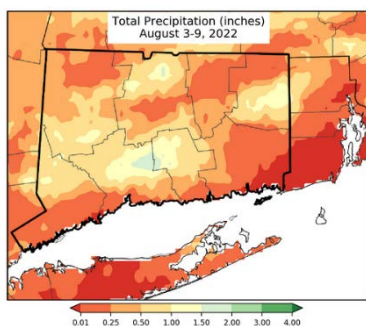


- Three systems have reported they are in the first stage of their drought plan. Several systems are requesting voluntary water use conservation.
- US Drought Monitor: – Expanded both D0- Abnormally Dry, D1-Moderate Drought and D2 Severe Drought in CT since last week.

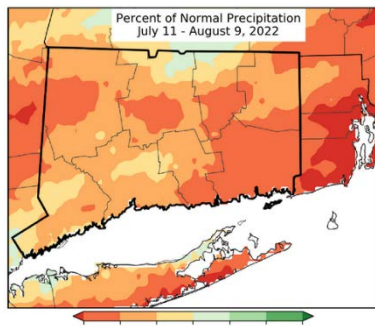


<https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CT>

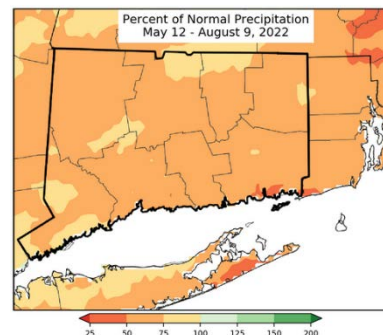
- Between July 27th and August 2nd, the state experienced trace amounts of rain across the state with isolated pockets of rain from 0.5 to 1.5 inches. But, most of the state did not have much rainfall (Map 1). The 30-day Percent of Normal Precipitation map shows below normal precipitation throughout CT (Map 2). For the last 90-days, the state is between 50% and 100% of normal. The majority of CT is between 50% and 75% of normal (Map 3). Drought is present going back to the 6-month timeframe. Streamflow and groundwater continue to indicate much below normal conditions across the state.



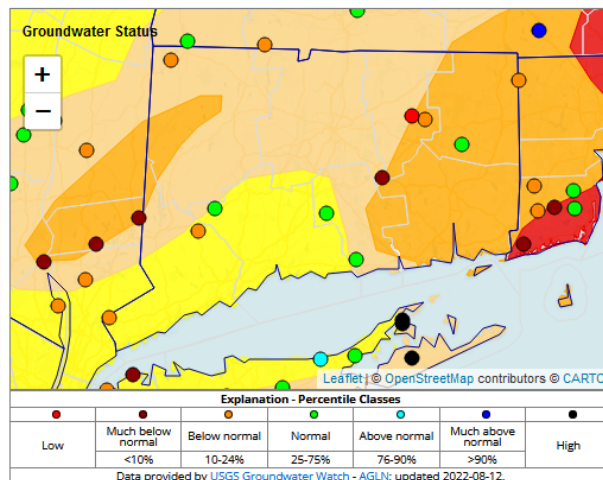
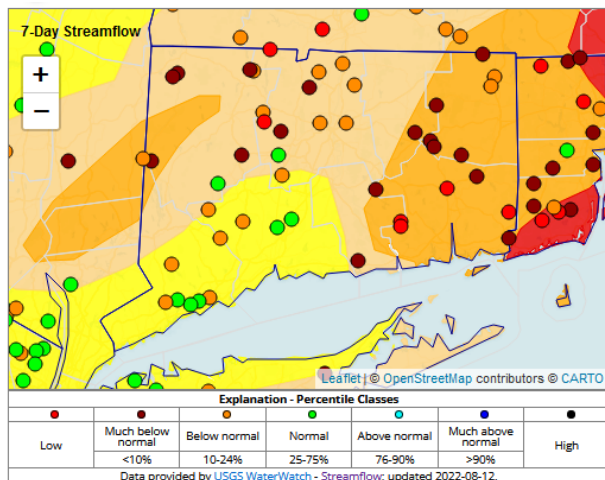
Map 1- 7 Day Total Precipitation



Map 2- 30 Day Percent of Normal Precipitation



Map 3 – 90 Day Percent of Normal Precipitation



DROUGHT CONSERVATION REQUESTS

- Norwalk Mayor declared drought advisory citywide on Friday 7/15
 - Asked residents to conserve water and stopped city field irrigation
- CTWC requests customers in Clinton, Guilford, Old Saybrook, and Westbrook to reduce water use by 15%
- Southeastern CT Water Authority is requesting all customers to voluntarily reduce outdoor water use.
 - <https://www.waterauthority.org/>
- Windham Water Works, on Aug 1, 2022, requested customers voluntarily implement conservation measures. Reservoir is still at 100% full.
- Hazardville Water Company urges customers to conserve water. Serves Hazardville, East Windsor, and Somers.
 - <https://www.hazardvillewater.com/>
- Manchester Water Dept approaching 1st drought trigger
- Putnam Water Department, on Aug 3, 2022, requested customers voluntarily implement conservation
- **Declared Drought Stages**
 - Norwich has entered their 1st drought stage – Water Supply Advisory.
 - UCONN on August 1, 2022 issued a Stage II Water Supply Watch and requested mandatory and voluntarily conservation of water.
 - CTWC – Guildford System enter their 1st drought stage - Drought Watch
 - New London is at their 1st stage – Drought Advisory
 - approaching 2nd drought trigger.

Private Wells

Local Health Departments have reported the following well permit totals for the month of July 2022

Week ending	Town	Total Permits
7/15	Windham	2
7/22	Windham	4
	New Haven	2
7/29	Windham	1

These numbers may not capture all wells that were deepened or fractured due to lack of water. DPH Circular Letter 2022-37, issued on July 14, 2022, requested LHD to report well permit issuance on a weekly basis.

- Franklin Well has run dry possibly due to overuse

Water Resources, Fisheries, and Forestry Conditions Report
Provided on 8/17/2022 by Doug Hoskins
Department of Energy and Environmental Protection

Water Diversion / Resource Concerns –

- The DEEP Diversion Program plans to soon notify all current permit holders to consider instituting voluntary water conservation and as applicable, to ensure compliance with any drought management plans and/or low streamflow restrictions if included as a permit condition.
- In order to better determine DEEP Water Diversion jurisdiction the program has purchased a portable ultrasonic water meter to allow more accurate determinations of pump withdrawal rates during compliance site visits.

Fisheries impacts-

- Flows on the West Branch and main stem Farmington Rivers continue to be low. As the heat wave passed last week Fisheries decreased their augmentation to 35 cfs (for a total of 85 cfs, 35 from DEEP and the required 50 from MDC). At that rate, the two Fisheries pools in Colebrook River Lake would be depleted on November 23, 2022, and as summer conditions wane, they may decrease releases further to conserve more water. As water temperatures below the Collinsville dams were reaching stressful levels for trout in the mainstem below Collinsville and trout were starting to congregate at some tributaries with cooler water on August 6, 2022, DEEP established a prohibition on fishing near the mouths of these tributaries to protect fish seeking cooler water refuge.

Fire danger-

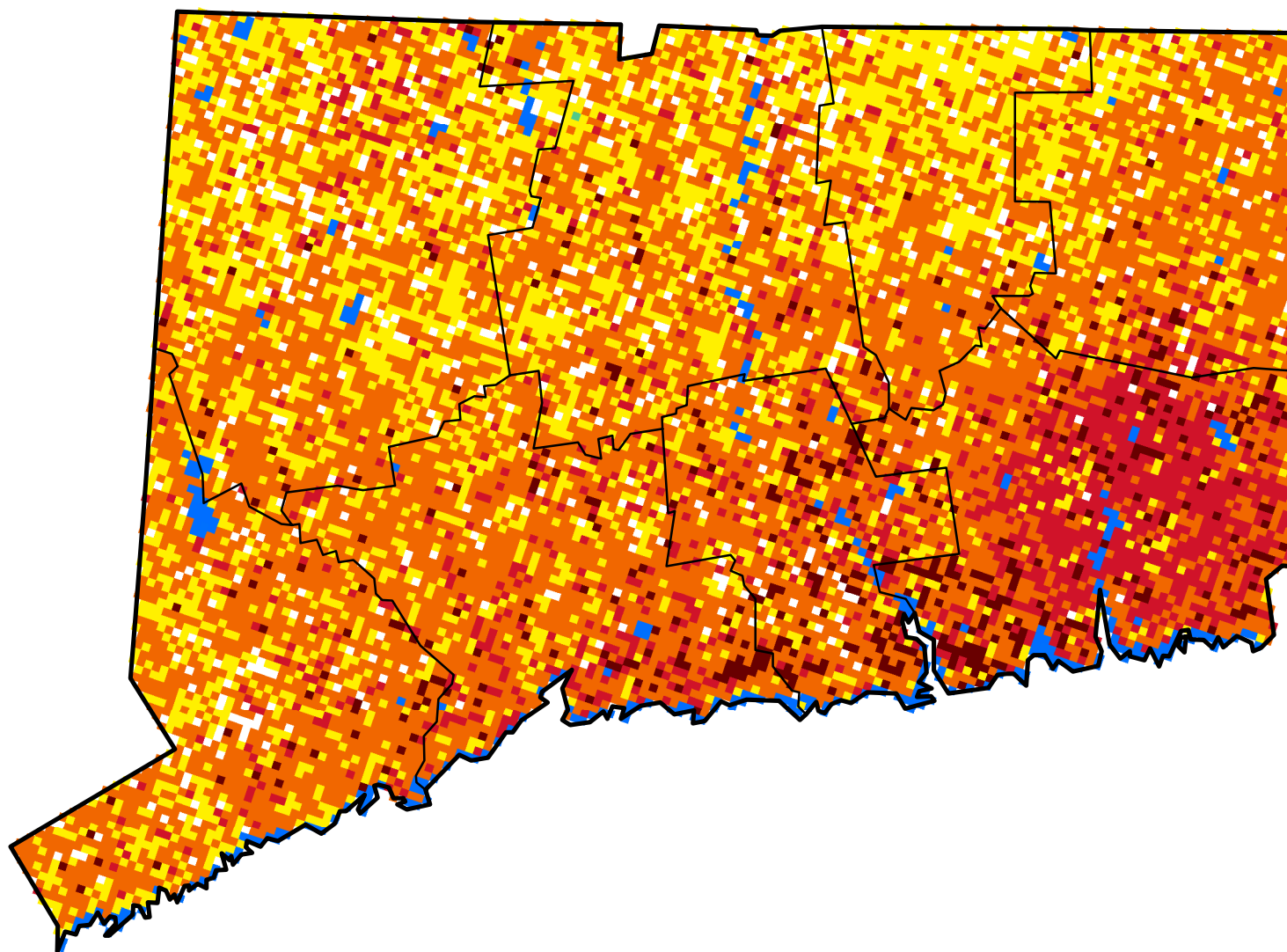
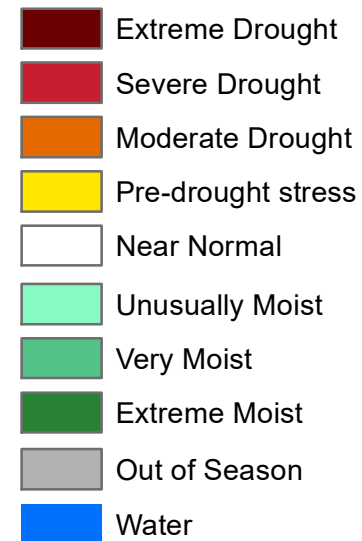
- Fire Danger is between High, Very High, and Extreme across state right now-depending on previous precipitation rates, and the amount of fuel moisture depletion. Available fuels are very dry and therefore quite flammable. We are seeing continuous fire starts, all have remained small so far, we haven't had big winds to spread them. Any fires that do start have the ability to burn into the duff layer and become a ground fire. Any ground fires are quite stubborn to extinguish. Fire Danger rates vary immensely across state.
- Generally, as of 8/17/22 **FIRE DANGER IS:**
 - **EXTREME-** Southern Middlesex, Southern New London, Northern Windham counties
 - **VERY HIGH-** Tolland and Hartford counties
 - **HIGH-** Litchfield, Fairfield, New Haven, Northern Middlesex, Northern New London, Southern Windham counties

Vegetation Drought Response Index

Complete: Connecticut

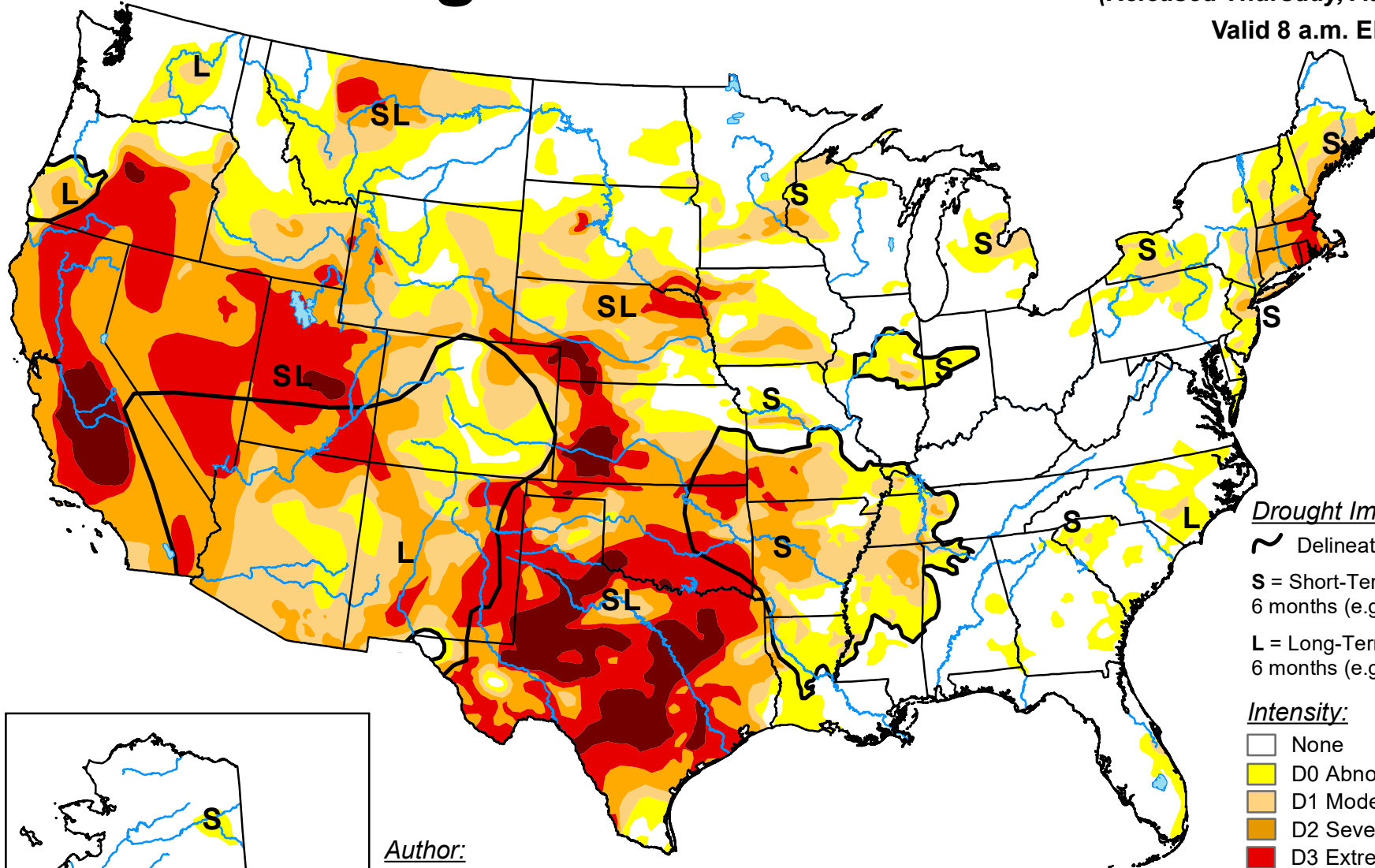
July 31, 2022

Vegetation Condition



U.S. Drought Monitor

August 16, 2022
(Released Thursday, Aug. 18, 2022)
Valid 8 a.m. EDT

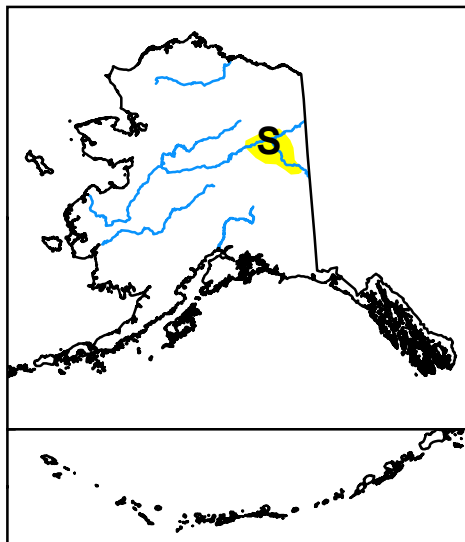


Drought Impact Types:

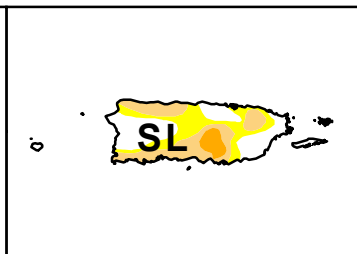
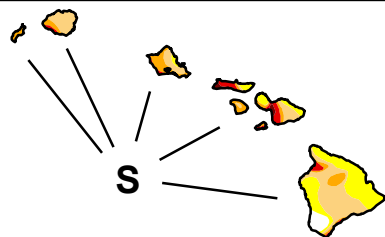
- ~ Delineates dominant impacts
- S** = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L** = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought



Author:
Richard Tinker
CPC/NOAA/NWS/NCEP



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>



droughtmonitor.unl.edu

Division of Emergency Management and Homeland Security: Long-Range Precipitation Outlook
Provided via email on 8/17/2022 by Doug Glowacki, DEMHS

During the next 15 days the GFS model is forecasting near normal rainfall with a total of 1.5" to 3.0" for Connecticut (see map below). Much of this rainfall is the result of afternoon shower and thunderstorm activity. This type of rainfall can be hit or miss. Toward the end of the month, the GFS model is indicating that a hurricane may approach New England, however, it is far too early for any reliable forecasting. It's also important to note that the last several long range forecasts from the GFS have over-estimated rainfall. Therefore, this may also be an over-estimate.

