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

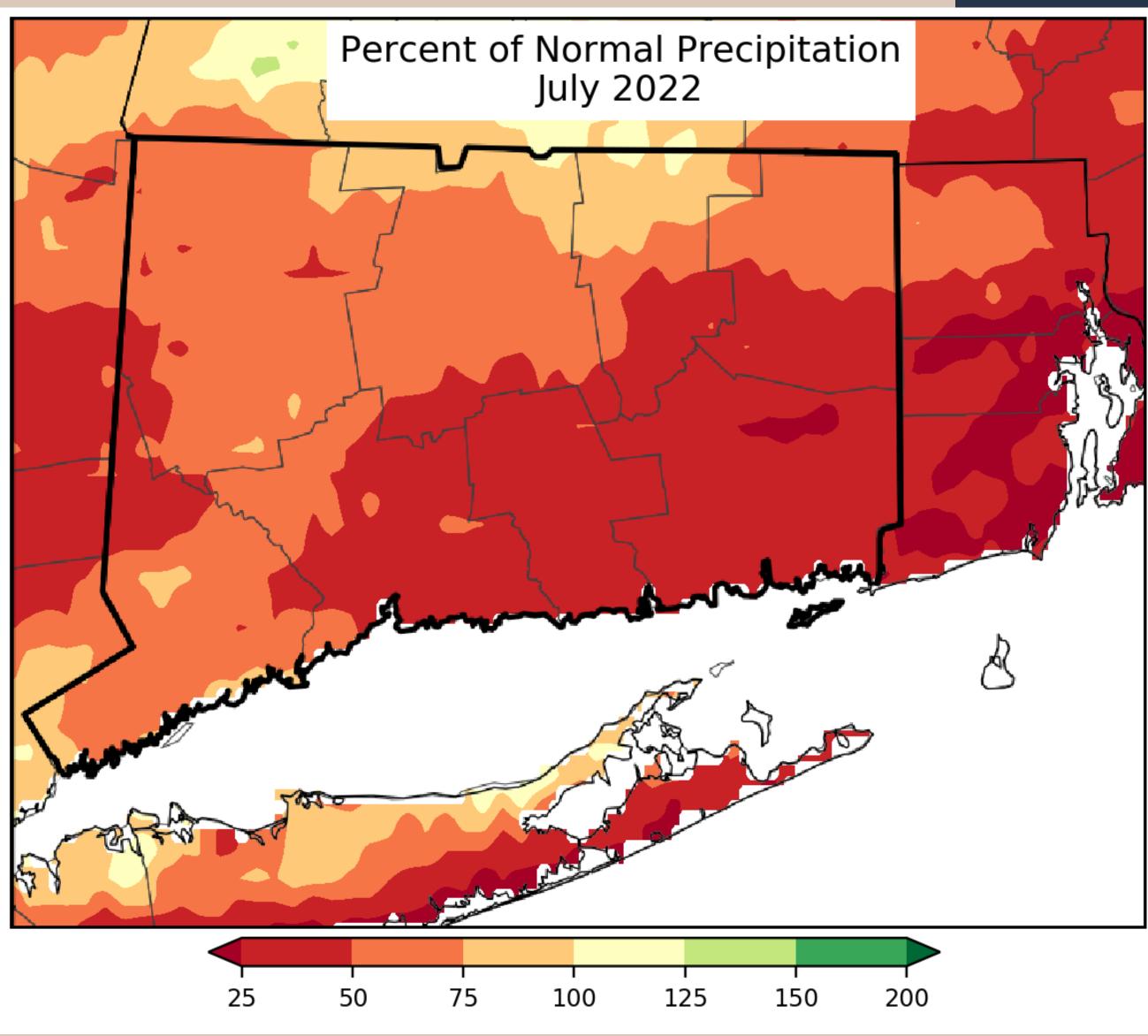
Thursday August 18th 2022 Prepared by: NWS WFO Boston/Norton, MA

F S NWSBoston

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July Recap- Percent of normal rainfall



8/18/2022 12:29 PM



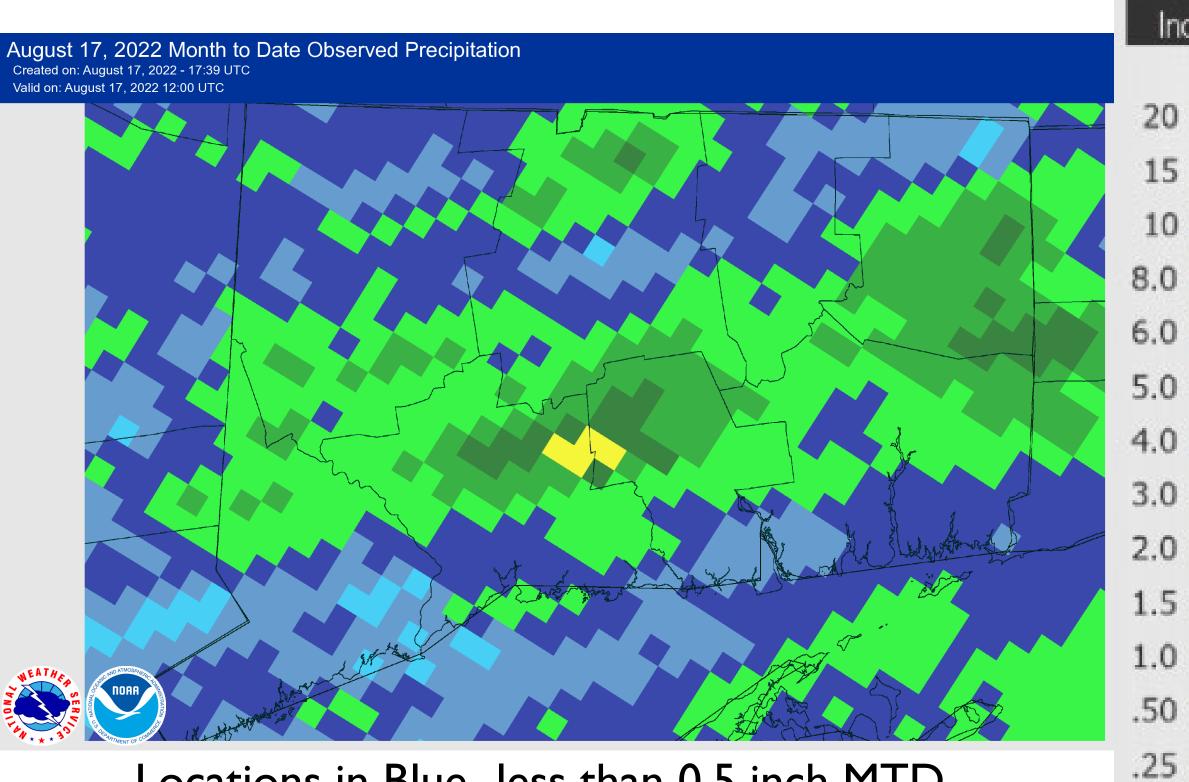
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August I-17 Rainfall & Percent Normal



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

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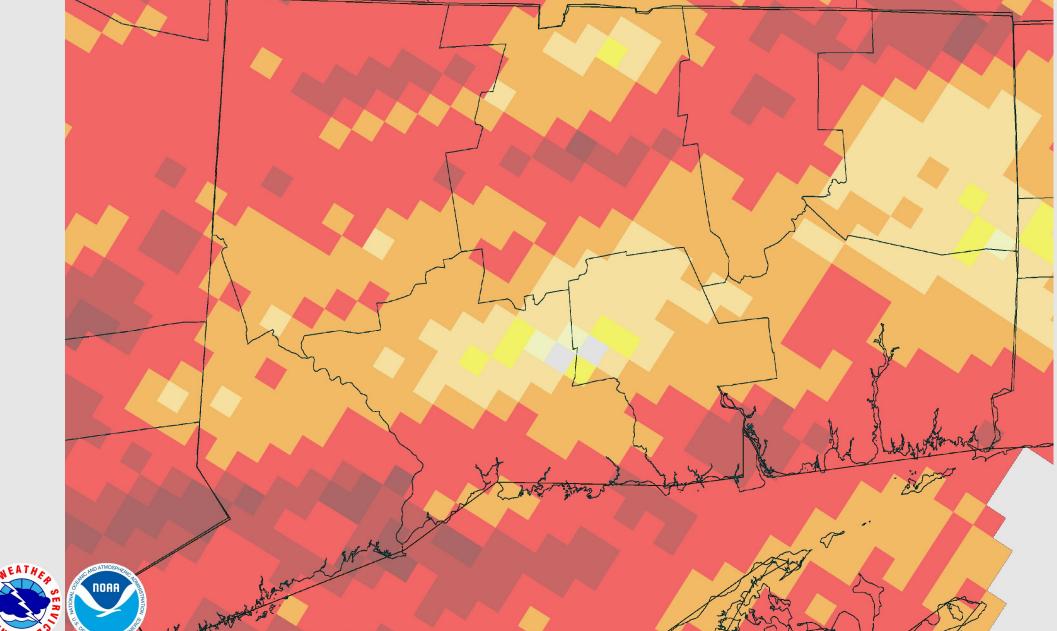


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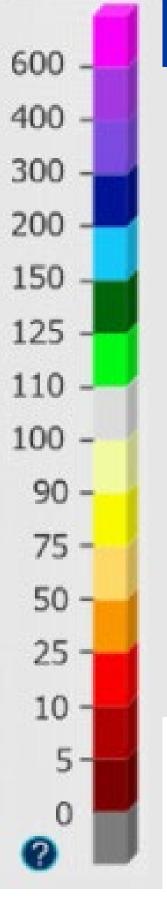




Locations in Brown- 25-50% of normal MTD Locations in Red- less than 50% of normal MTD





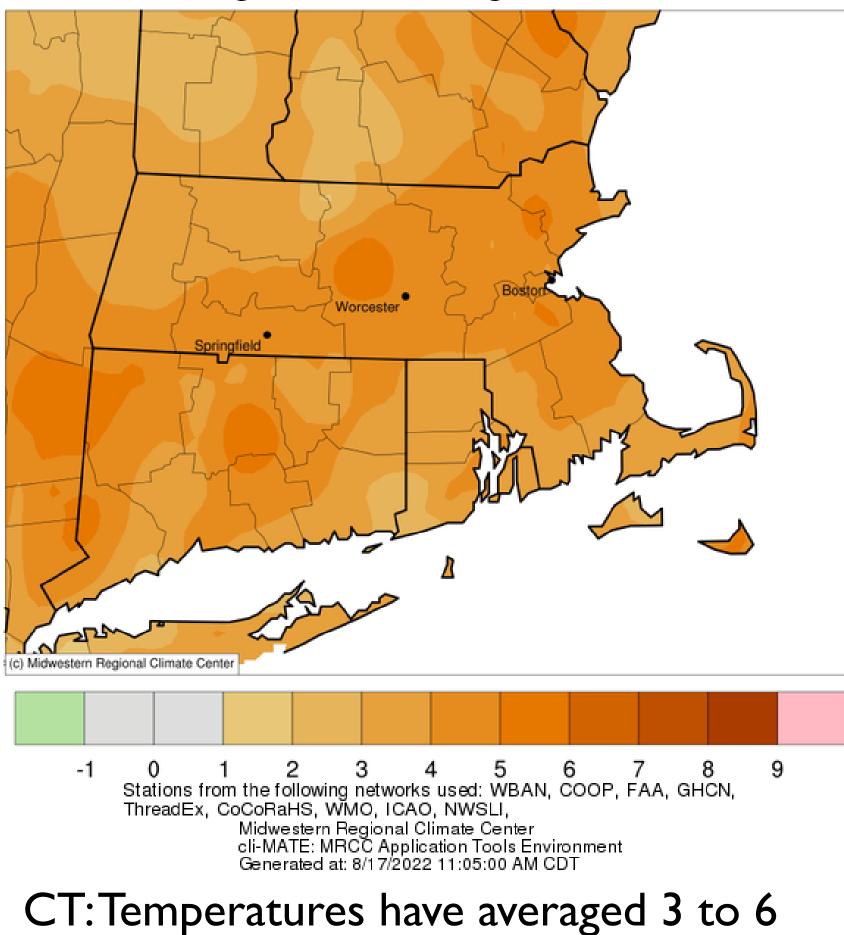




August MTD Temperature Departure

Average Temperature (°F): Departure from 1991-2020 Normals

August 01, 2022 to August 17, 2022



degrees above normal month-to-date

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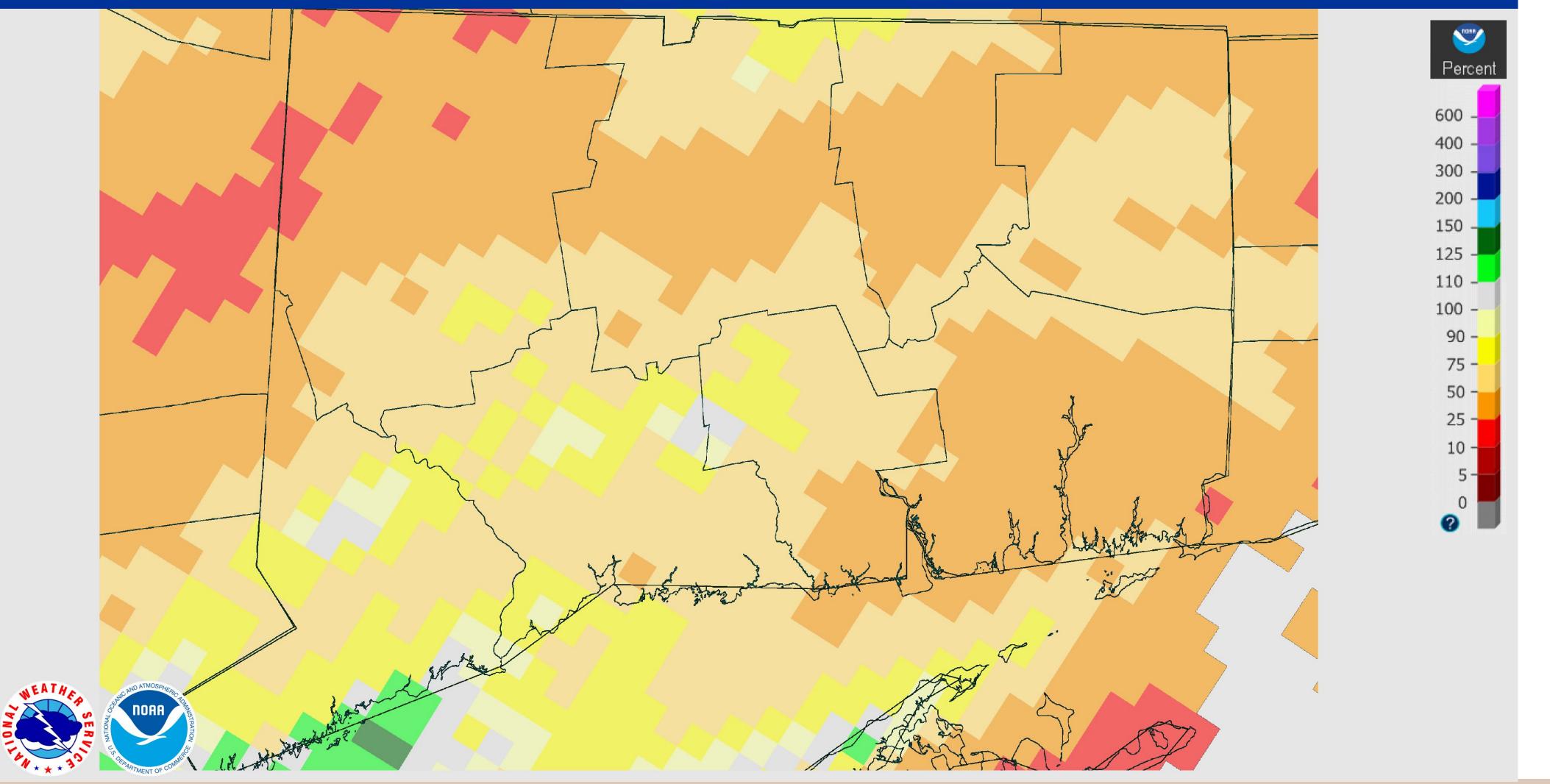
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30-Day Percent of Normal Rain

August 17, 2022 30-Day Percent Precipitation

Created on: August 17, 2022 - 17:41 UTC

Valid on: August 17, 2022 12:00 UTC



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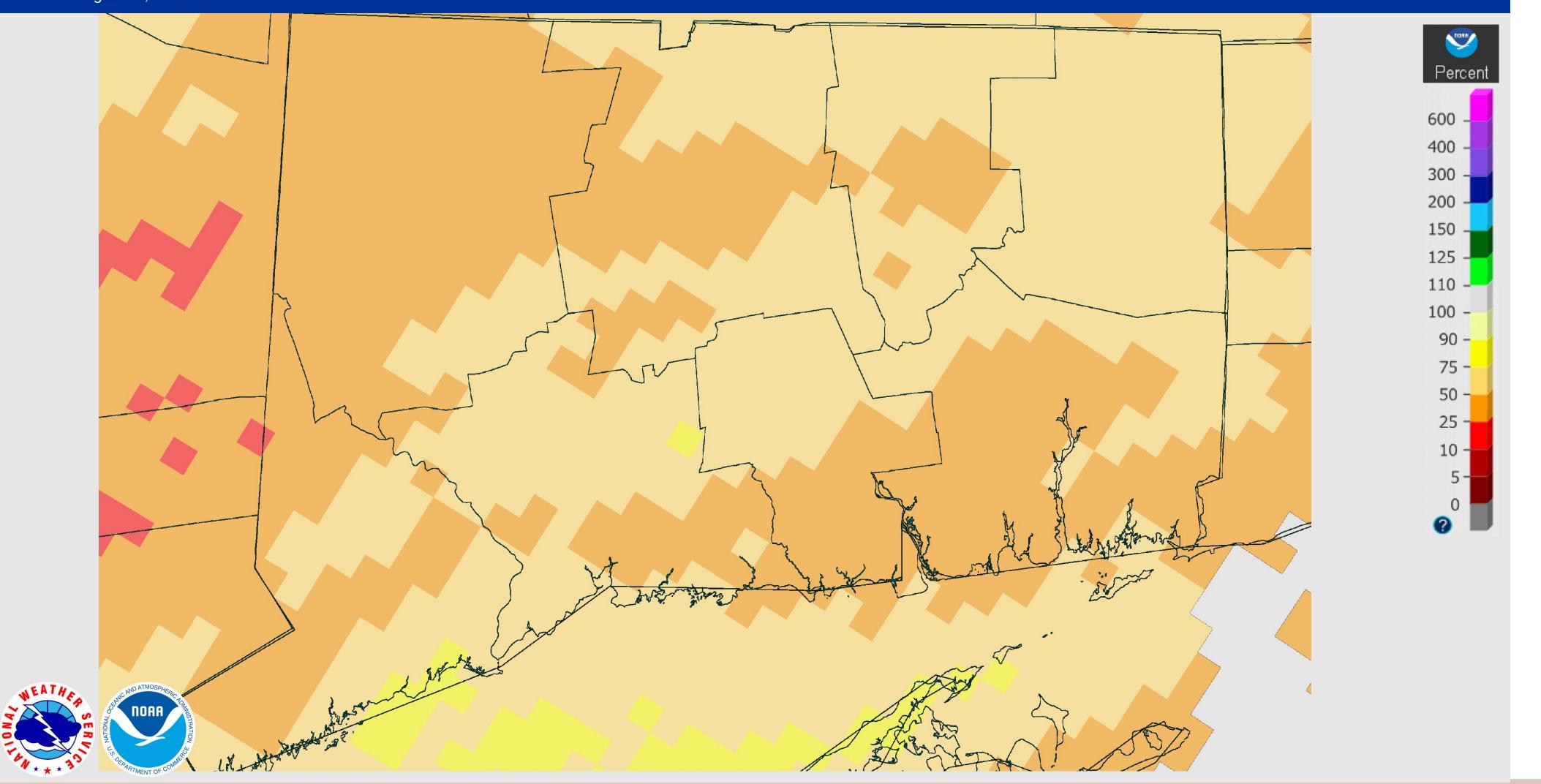
Boston/Norton MA WEATHER FORECAST OFFICE



60-Day Percent of Normal Rain

August 17, 2022 60-Day Percent Precipitation

Created on: August 17, 2022 - 17:42 UTC Valid on: August 17, 2022 12:00 UTC



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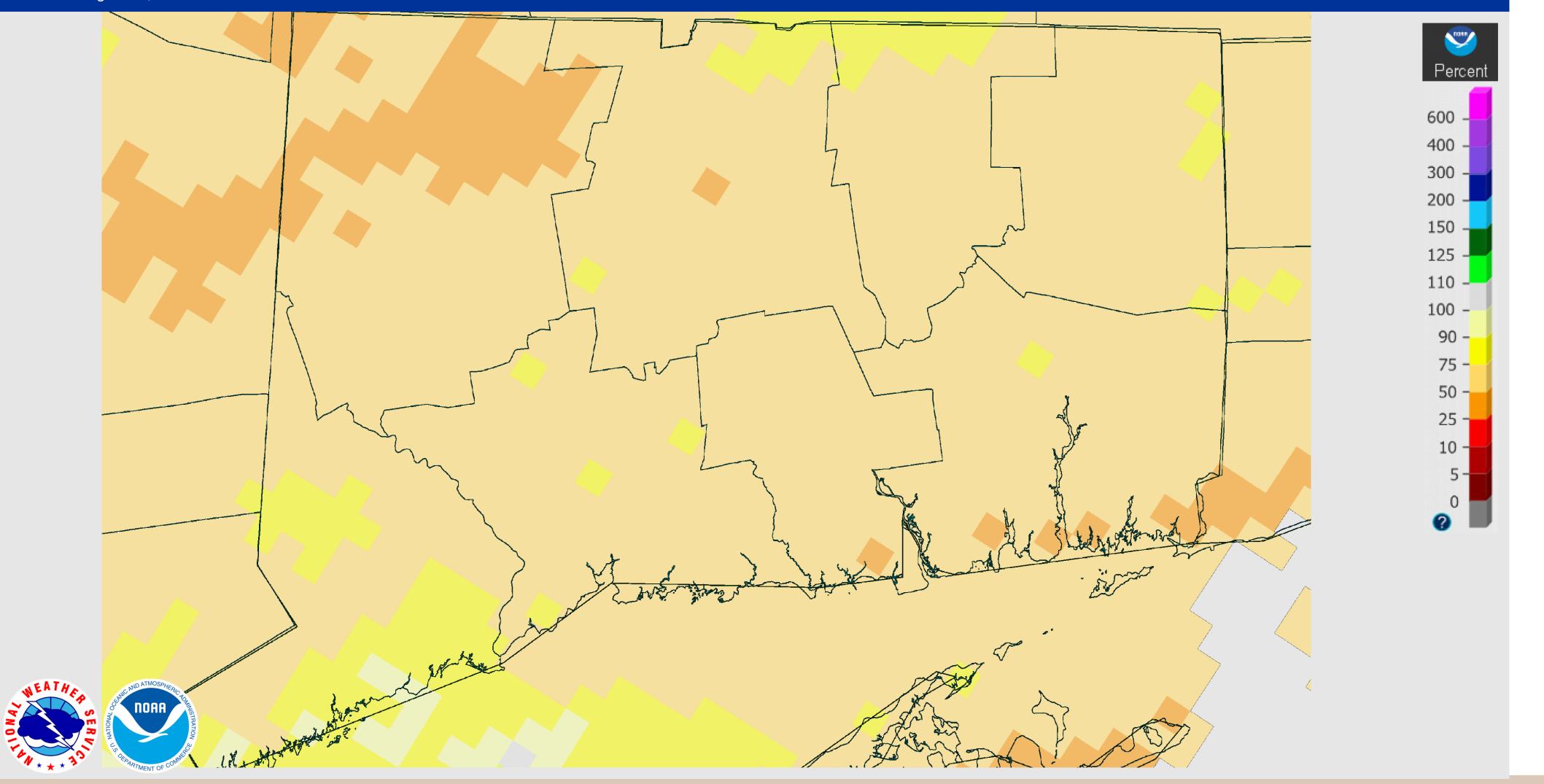
Boston/Norton MA WEATHER FORECAST OFFICE



90-Day Percent of Normal Rain

August 17, 2022 90-Day Percent Precipitation

Created on: August 17, 2022 - 17:44 UTC Valid on: August 17, 2022 12:00 UTC



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U.S. Geological Survey

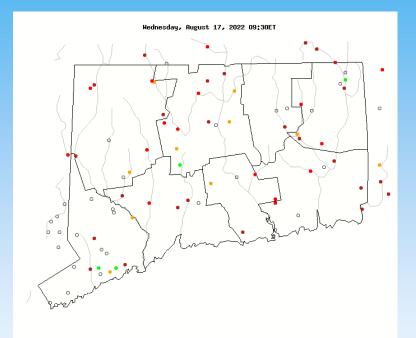
Status of streamflow and groundwater levels, as of August 16, 2022



Provisional data, subject to review and revision

USGS

Streamflow Conditions 8/17/22

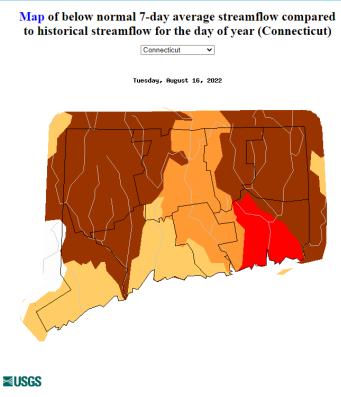


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 $\label{eq:choose a data retrieval option and select a location on the map} \\ \bigcirc \mbox{List of all stations } @ \mbox{Single station } \bigcirc \mbox{Nearest stations } \bigcirc \mbox{Peak flow} \\$

Explanation - Percentile classes								
	•		•	•			•	0
	Low	<10	10-24	25-75	76-90	>90	LEast	Not-ranked
	LOW	Much below normal	Below normal	Normal	Above normal	Much above normal	High	Not-ranked



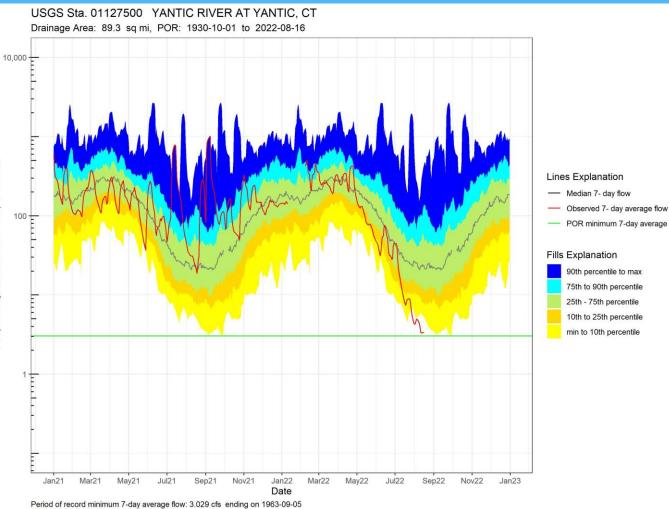
Click map to obtain more detailed drought information for the state

Explanation - Percentile classes								
Low	<=5	6-9	10-24					
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below					



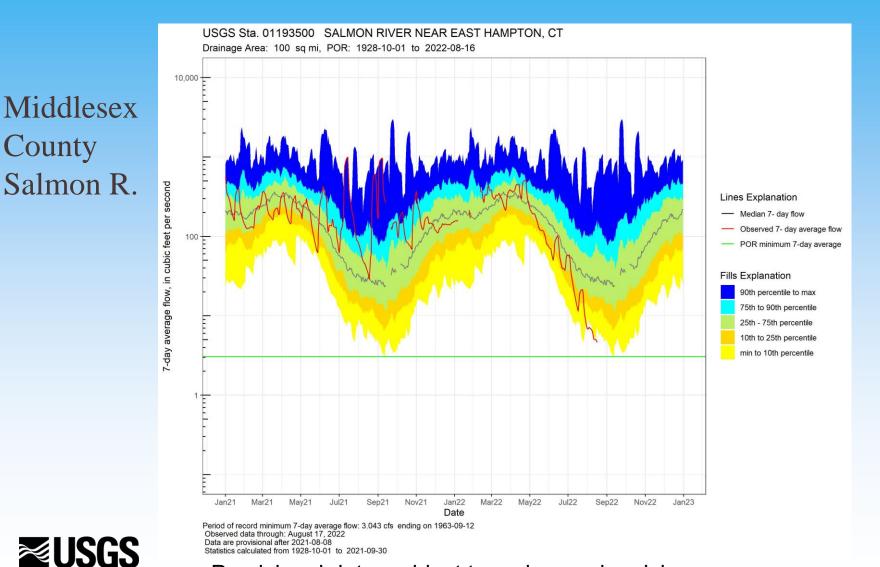
New London County Yantic R.

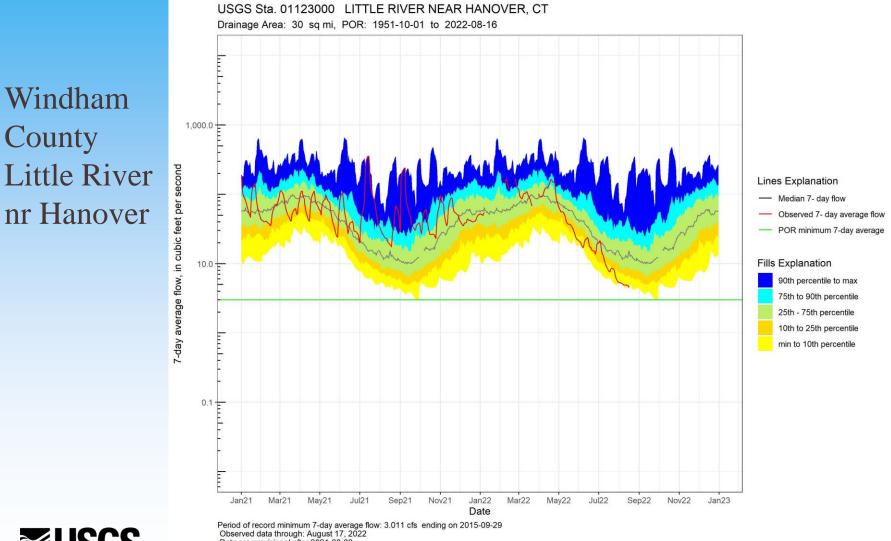
7-day average flow, in cubic feet per second



Period of record minimum 7-day average flow: 3.029 cfs ending on 1963-09-0 Observed data through: August 17, 2022 Data are provisional after 2021-11-08 Statistics calculated from 1930-10-01 to 2021-09-30

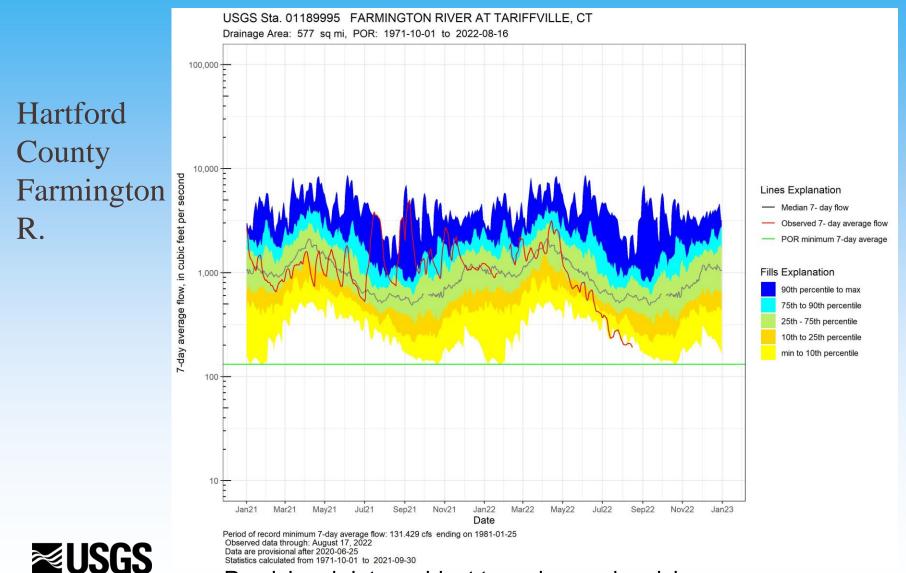




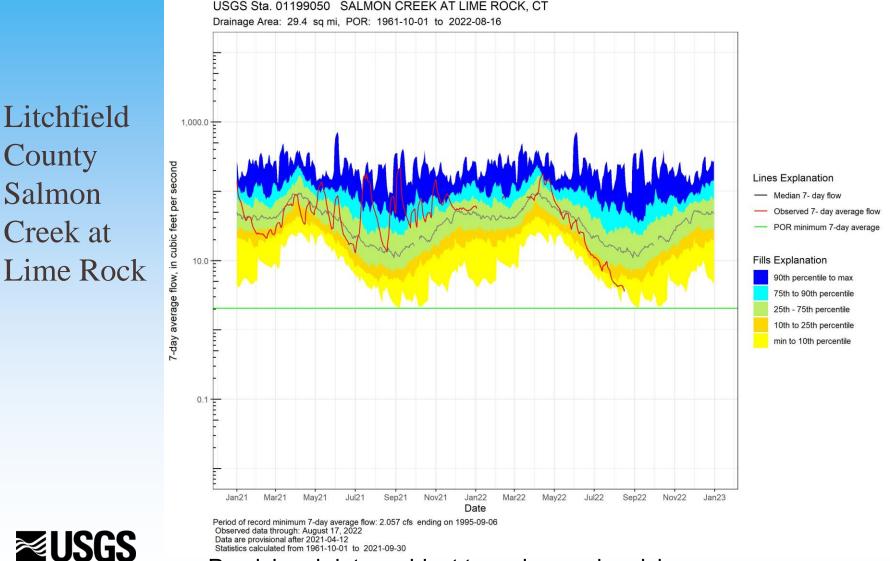




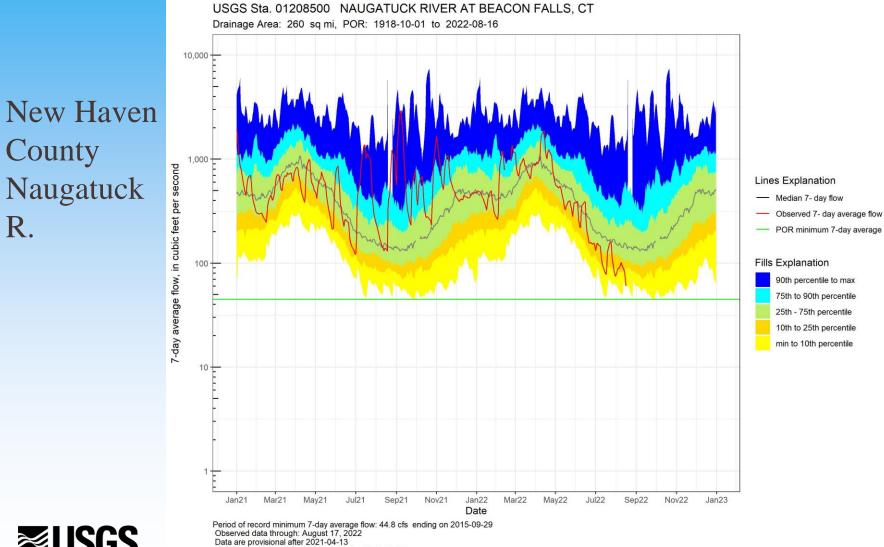
Data are provisional after 2021-08-09 Statistics calculated from 1951-10-01 to 2021-09-30 Provisional data, subject to review and revision



Statistics calculated from 1971-10-01 to 2021-09-30 Provisional data, subject to review and revision



Observed data through: August 17, 2022 Data are provisional after 2021-04-12 Statistics calculated from 1961-10-01 to 2021-09-30

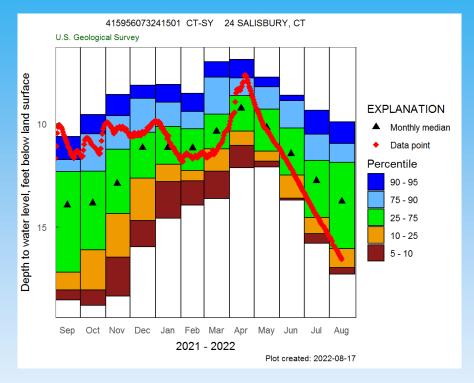


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Statistics calculated from 1918-10-01 to 2021-09-30 Provisional data, subject to review and revision

Groundwater Levels, Salisbury

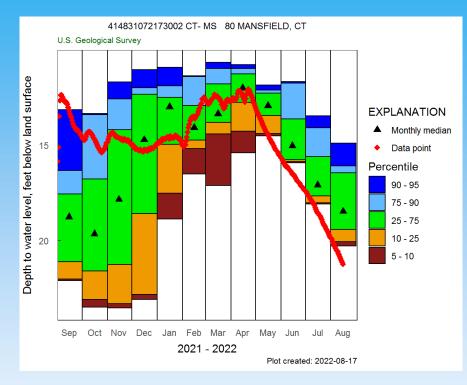


Aquifer: Stratified Drift

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



Groundwater Levels, Mansfield

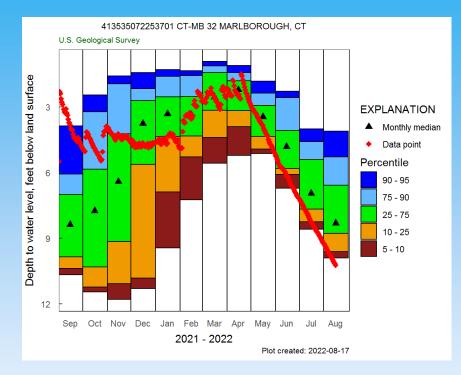


Aquifer: Bedrock

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



Groundwater Levels, Marlborough

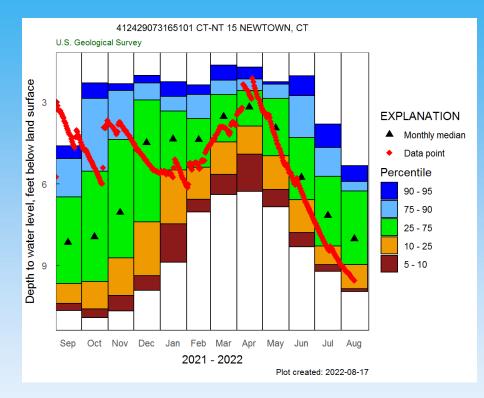


Aquifer: Till

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



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

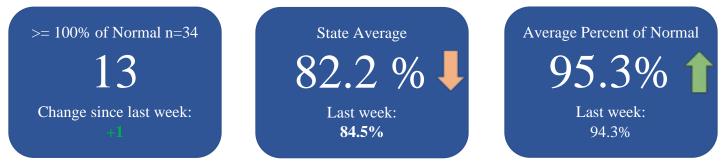


Surface Reservoir Capacity Measurements and Trends 8/12/2022 Update

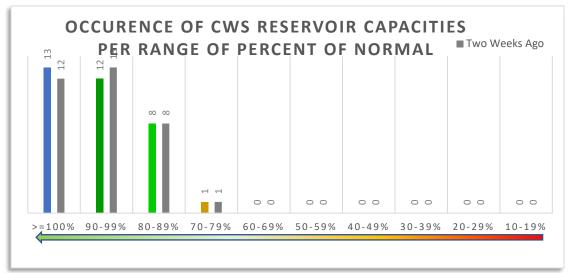
USDM Expands Drought Classifications Across CT!

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.

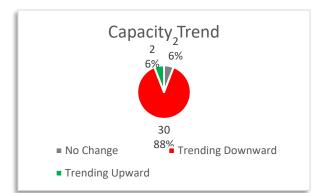
Key takeaways:



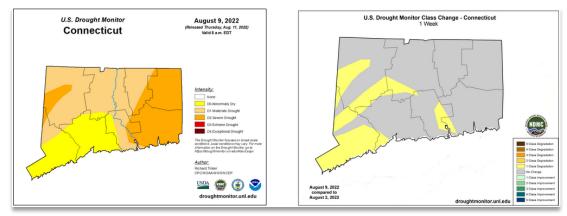
• 3 reservoir systems have reported that they are currently at 100% full (No change since last week).



- The gray bars indicate last week's measurements. Under normal capacities, the graph above would have all of the systems in the >=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).

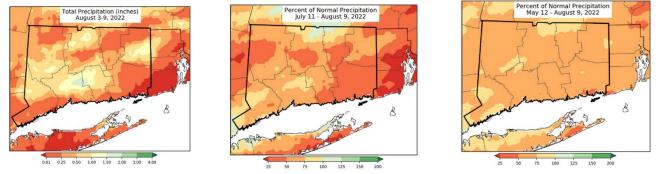


- Three systems have reported they are in the first stage of their drought plan. Several systems are requesting voluntary water use conservation.
- US Drought Monitor: Expanded both D0- Abnormally Dry, D1-Moderate Drought and D2 Severe Drought in CT since last week.



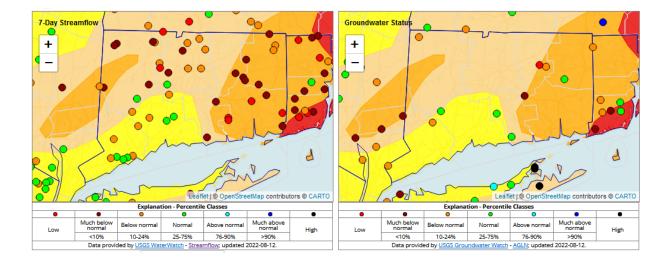
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?CT

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



PWSID	PWS Name	Most Recent Reading Date	Percent Full	Current Status	Trend H	listorical Average	Percent of Normal	Previous Date	Previous Percent Full	County_Served
CT1030011	Norwalk First Taxing District	8/7/2022	65.90	No Drought Stage	\checkmark	76.90	86	7/31/2022	71.00	FAIRFIELD
CT0570011	Aquarion Water Co of CT-Greenwich Syster	7/17/2022	83.60	No Drought Stage	\checkmark	87.40	96	7/10/2022	88.30	FAIRFIELD
CT0150011	Aquarion Water Co of CT-Main System	7/17/2022	88.40	No Drought Stage	↓	91.40	97	7/10/2022	90.20	FAIRFIELD
CT0340011	Danbury Water Department	7/31/2022	84.90	No Drought Stage	\checkmark	87.00	98	7/24/2022	87.20	FAIRFIELD
CT1030021	South Norwalk Electric & Water	8/8/2022	71.30	No Drought Stage	↓	72.00	99	8/1/2022	76.90	FAIRFIELD
CT1350011	Aquarion Water Co of CT-Stamford	7/17/2022	85.60	No Drought Stage	↓	85.00	101	7/10/2022	87.40	FAIRFIELD
CT0090011	Bethel Water Dept	8/7/2022	98.40	No Drought Stage	↓	94.50	104	7/31/2022	100.00	FAIRFIELD
CT0473011	CTWC - Northern Reg-Western System	8/4/2022	69.10	No Drought Stage	↓	82.80	83	7/28/2022	71.90	HARTFORD
CT0770021	Manchester Water Department	8/7/2022	81.10	Approaching Trigger Level	↓	86.00	94	7/31/2022	82.80	HARTFORD
CT0170011	Bristol Water Department	7/31/2022	89.20	No Drought Stage	↓	90.90	98	7/24/2022	93.90	HARTFORD
CT0640011	Metropolitan District Commission	8/8/2022	91.00	No Drought Stage	↓	89.80	101	8/1/2022	92.10	HARTFORD
CT0890011	New Britain Water Department	8/4/2022	75.00	No Drought Stage	↓	73.30	102	7/28/2022	78.20	HARTFORD
CT1310011	Southington Water Department	8/6/2022	73.90	No Drought Stage	\checkmark	70.40	105	7/30/2022	77.10	HARTFORD
CT1430011	Torrington Water Company	8/12/2022	62.10	No Drought Stage	\checkmark	78.90	79	8/5/2022	64.70	LITCHFIELD
CT1220011	Aquarion Water Co of CT-Salisbury Sys	7/17/2022	80.70	No Drought Stage	\checkmark	93.50	86	7/10/2022	82.60	LITCHFIELD
CT1620011	Winsted Water Works	8/7/2022	89.30	No Drought Stage	\checkmark	95.40	94	7/31/2022	94.10	LITCHFIELD
CT0980011	Aquarion Water Co of CT-Norfolk System	7/17/2022	98.50	No Drought Stage	1	98.60	100	7/10/2022	97.10	LITCHFIELD
CT1250011	Sharon Water & Sewer Commission	7/30/2022	100.00	No Drought Stage		94.30	106	7/23/2022	100.00	LITCHFIELD
CT0830011	Middletown Water Department	7/31/2022	72.60	No Drought Stage	\checkmark	90.40	80	7/24/2022	78.70	MIDDLESEX
CT0261031	CTWC - Shoreline Region-Chester System	8/4/2022	81.40	No Drought Stage	\checkmark	87.50	93	7/28/2022	84.80	MIDDLESEX
CT0830021	Connecticut Valley Hospital	8/1/2022	91.90	No Drought Stage	\checkmark	91.70	100	7/25/2022	92.30	MIDDLESEX
CT0608011	CTWC - Shoreline Region-Guilford System	8/4/2022	66.00	Drought Watch	\checkmark	79.30	83	7/28/2022	71.10	NEW HAVEN
CT1510011	Waterbury Water Department	7/31/2022	77.30	No Drought Stage	$\downarrow\downarrow\downarrow$	91.20	85	7/26/2022	91.70	NEW HAVEN
CT0800011	Meriden Water Division	7/24/2022	77.60	No Drought Stage	\checkmark	87.10	89	7/17/2022	80.50	NEW HAVEN
CT0880011	CTWC - Naugatuck Region-Central System	8/4/2022	82.90	No Drought Stage	↓	86.70	96	7/28/2022	86.20	NEW HAVEN
CT0930011	Regional Water Authority	8/7/2022	80.20	No Drought Stage	\checkmark	80.00	100	7/31/2022	82.20	NEW HAVEN
CT1480011	Wallingford Water Department	8/5/2022	84.40	No Drought Stage	\checkmark	80.40	105	7/22/2022	87.30	NEW HAVEN
CT1370011	Aquarion Water Co of CT-Mystic	7/25/2022	79.00	No Drought Stage	$\checkmark \checkmark$	89.20	89	7/17/2022	89.90	NEW LONDON
CT0580011	Jewett City Water Company	8/1/2022	78.90	No Drought Stage	\checkmark	85.30	93	7/25/2022	81.70	NEW LONDON
CT1040011	Norwich Public Utilities	8/6/2022	80.00	Water Supply Advisory	\checkmark	85.10	94	7/30/2022	82.80	NEW LONDON
CT0950011	New London Dept. of Public Utilities	8/7/2022	66.10	Drought Advisory	\checkmark	68.70	96	7/31/2022	69.50	NEW LONDON
CT0590011	Groton Utilities	8/1/2022	89.50	No Drought Stage	\checkmark	85.90	104	7/25/2022	89.80	NEW LONDON
CT1340011	CTWC - Northern Reg-Stafford System	8/4/2022	100.00	No Drought Stage	1	95.80	104	7/28/2022	98.40	TOLLAND
CT1630011	Windham Water Works	8/7/2022	100.00	No Drought Stage		100.00	100	7/31/2022	100.00	WINDHAM
			82.23			86.25	95.34	Ave	e Percent of Normal by County	
/	\uparrow -Increase since last measurement (less than 10% increase)			Number of systems:					97	.29 FAIRFIELD

\uparrow	-Increase since last measurement (less than 10% increase)
$\uparrow\uparrow$	-Increase since last measurement (10% or greater increase)
\checkmark	-Decrease since last measurement (less than 10% decrease)
$\checkmark \checkmark$	-Decrease since last measurement (10% or greater decrease)
	 Same measurement as the previous measurement

Number of systems: Greater than or equal to 100% of Normal Between 90% and 99% of Normal Less than 90% of Normal At 100% Full

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97.29 FAIRFIELD 97.17 HARTFORD 93.00 LITCHFIELD 91.00 MIDDLESEX 93.00 NEW HAVEN 95.20 NEW LONDON 104.00 TOLLAND

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.
 - o <u>https://www.waterauthority.org/</u>
- 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.
 - o <u>https://www.hazardvillewater.com/</u>
- 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.

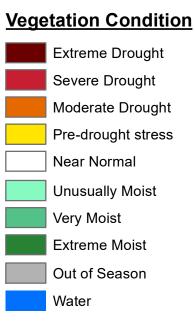
• Generally, as of 8/17/22 FIRE DANGER IS:

- 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

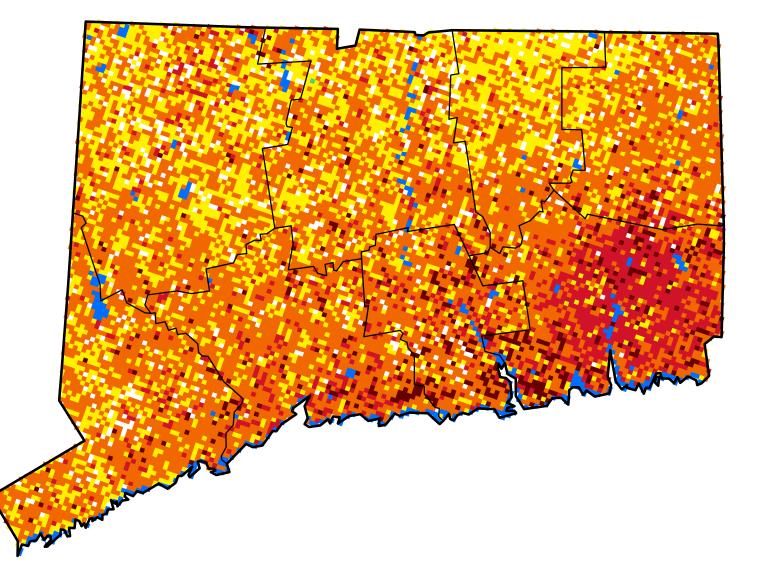


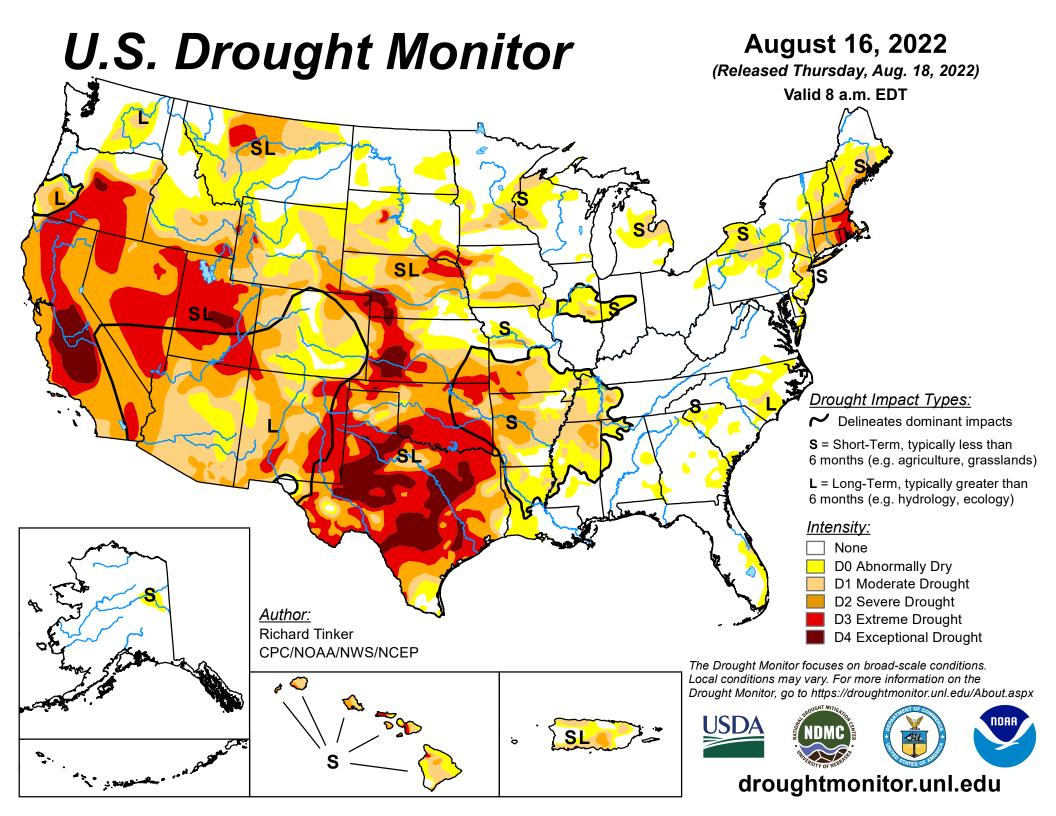












Division of Emergency Management and Homeland Security: Long-Range Precipitation Outlook Provided via email on 8/17/2022 by Doug Glowacki, DEMHS

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.

