## Connecticut Drought Conditions Report

Monthly Update for August 2022

Connecticut Water Planning Council Interagency Drought Workgroup September 8, 2022 Regular Meeting CT Interagency Drought Workgroup Regular Meeting September 8, 2022 1:00 PM – 3:00 PM

VIA Microsoft Teams Join on your computer or mobile app <u>Click here to join the meeting</u> Meeting ID: 299 345 882 394 Passcode: 8KXSgU <u>Download Teams</u> | Join on the web <u>Or call in (audio only)</u> <u>+1 860-840-2075,,446581831#</u> United States, Hartford Phone Conference ID: 446 581 831#

### Agenda

- 1. Call to order
- 2. Seating of voting members
- 3. Minutes VOTE
  - a. August 4, 2022
  - b. August 18, 2022
- 4. Business
  - a. Review of Hydrologic Conditions
    - i. Review August monthly data
    - ii. Review any data available for September month-to-date
  - b. Drought stage recommendations VOTE
  - c. Drought Plan Update
    - i. Water Planning Council action at September meeting concerning 8/4/2022 Drought Plan update
    - ii. Next Steps
  - d. Drought Plan implementation updates
  - e. Next regular meeting October 6, 2022
  - f. Other
- 5. Public Comment
- 6. Adjourn

Stage 2 Drought Trigger Summary by Region September 8, 2022										
	Stage 2 Trigger	Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham	Data of Record
Precipitation (1)	Two-month total below 65% of normal	43%	68%	52%	63%	64%	52%	91%	72%	8/31/2022
<u>Ground Water (2)</u>	Two out of three months below the 25th percentile	36% stations meet trigger	60% stations meet trigger	60% stations meet trigger	71% stations meet trigger	46% stations meet trigger	80% stations meet trigger	75% stations meet trigger	83% stations meet trigger	8/31/2022
Streamflow (3)	Two out of three months below the 25th percentile	62% stations meet trigger	55% stations meet trigger	70% stations meet trigger	75% stations meet trigger	75% stations meet trigger	86% stations meet trigger	100% stations meet trigger	90% stations meet trigger	8/31/2022
Reservoirs (4)	Average levels less than 80% of normal	89% of normal	87% of normal	85% of normal	89% of normal	86% of normal	83% of normal	94% of normal	100% of normal	8/31/2022
Palmer Drought Severity Index (5)	-2.9 to -2.0	-4.98	-3.74	-4.18	-4.98	-4.98	-4.98	-3.74	-3.74	9/3/2022
<u>Crop Moisture</u> Index (6)	-1.9 to -1.0	-2.53	-0.67	-1.79	-2.53	-2.53	-2.53	-0.67	-0.67	9/3/2022
VegDRI (seasonal) (7)	Pre-drought stress				Not av	ailable				7/31/2022
Fire Danger (8)	Moderate	Low	Low	Low	Low	Low	Low	Low	Low	9/8/2022
<u>U.S. Drought</u> Monitor (9)	Intensity level D1-D2	D1-D2	D1-D2	D1-D2	D1-D2	D1-D2	D1-D3	D1-D2	D1-D2	9/8/2022
Key:	Drought trigger met across the majority of region	Region partially m	eets drought	Drought trigger no maiority of region	t met across the (conditions can be					

ney:	Drought thyger met across	Region partially meets drought	Drought ungger not met across un
	the majority of region	trigger or is near trigger threshold	majority of region (conditions can
		(judgement call needed)	worse in specific areas)

#### Methodology:

(1) Based on monthly precipitation averaged by region, calculated by National Weather Service (NWS).

(2) Based on monthly assessment of groundwater stations by region, calculated by United States Geological Survey (USGS). Region is identified as meeting trigger when ≥65% of stations in the region meet the threshold. Region is identified as not meeting trigger when <25% of stations in the region meet the threshold. Region is identified as partially meeting trigger when greater than 25% and less than 65% of stations in the region meet the threshold.

(3) Based on monthly assessment of stream gauge stations by region, calculated by USGS. Region is identified as meeting trigger when ≥65% of stations in the region meet the threshold. Region is identified as not meeting trigger when <25% of stations in the region meet the threshold. Region is identified as partially meeting trigger when greater than 25% and less than 65% of stations in the region meet the threshold.

(4) Based on latest available reservoir status reports obtained from public water suppliers and compiled by CT Department of Public Health Drinking Water Section.

(5) Calculated by Climate Prediction Center (CPC) for each State Climate Division and extrapolated to county. Northwestern Climate Division reflective of Litchfield county. Central Climate Division reflective of Hartford, Tolland, Windham counties. Blend of Central Climate Division and Coastal Climate Division for Fairfield, New Haven, Middlesex, New London counties.

(6) Calculated by CPC for each State Climate Division and extrapolated to county. Northwestern Climate Division reflective of Fairfield county, Central Climate Division reflective of Hartford, Tolland, Windham counties. Blend of Central Climate Division and Coastal Climate Division for Fairfield. New Haven. Middlesex. New London counties.

(7) Based on visual assessment of geographic extent of each VegDri drought designation in each region, calculated by the National Drought Mitigation Center in collaboration with USGS.

(8) Based on daily forest fire danger report from CT DEEP Bureau of Natural Resources, Division of Forestry.

(9) Based on analysis of most recent edition of the U.S. Drought Monitor, produced by the National Drought Mitigation Center.

Stage 3 Drought Trigger Summary by Region September 8, 2022										
	Stage 3 Trigger	Fairfield	Hartford	Litchfield	Middlesex	New Haven	New London	Tolland	Windham	Data of Record
Precipitation (1)	Three-month total below 65% of normal	59%	70%	56%	67%	70%	65%	82%	81%	7/31/2022
<u>Ground Water (2)</u>	Four consecutive months below the 25th percentile	≤25% stations meet trigger	40% stations meet trigger	40% stations meet trigger	≤25% stations meet trigger	≤25% stations meet trigger	40% stations meet trigger	50% stations meet trigger	83% stations meet trigger	7/31/2022
Streamflow (3)	Four out of five months below the 25th percentile	≤25% stations meet trigger	29% stations meet trigger	33% stations meet trigger	40% stations meet trigger	7/31/2022				
Reservoirs (4)	Average levels less than 70% of normal	89% of normal	87% of normal	85% of normal	89% of normal	86% of normal	83% of normal	94% of normal	100% of normal	7/31/2022
Palmer Drought Severity Index (5)	-3.0 to -3.99	-4.98	-3.74	-4.18	-4.98	-4.98	-4.98	-3.74	-3.74	9/3/2022
Crop Moisture Index (6)	-2.0 to -2.99	-2.53	-0.67	-1.79	-2.53	-2.53	-2.53	-0.67	-0.67	9/3/2022
VegDRI (seasonal) (7)	Moderate drought conidtions				Not av	ailable				7/31/2022
Fire Danger (8)	High	Low	Low	Low	Low	Low	Low	Low	Low	9/8/2022
<u>U.S. Drought</u> <u>Monitor (9)</u>	Intensity level D2-D3	D1-D2	D1-D2	D1-D2	D1-D2	D1-D2	D1-D3	D1-D2	D1-D2	9/8/2022

Key:	Drought trigger met across	Region partially meets drought	Drought trigger not met across the
	the majority of region	trigger or is near trigger threshold	majority of region (conditions can be
		(judgement call needed)	worse in specific areas)

#### Methodology:

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(3) Based on monthly assessment of stream gauge stations by region, calculated by USGS. Region is identified as meeting trigger when ≥65% of stations in the region meet the threshold. Region is identified as not meeting trigger when ≤25% of stations in the region meet the threshold. Region is identified as partially meeting trigger when greater than 25% and less than 65% of stations in the region meet the threshold.

(4) Based on latest available reservoir status reports obtained from public water suppliers and compiled by CT Department of Public Health Drinking Water Section.

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(8) Based on daily forest fire danger report from CT DEEP Bureau of Natural Resources, Division of Forestry.

(9) Based on analysis of most recent edition of the U.S. Drought Monitor, produced by the National Drought Mitigation Center.



# CT Interagency Drought Workgroup NWS Update

# Thursday September 8<sup>th</sup> 2022 Prepared by: NWS WFO Boston/Norton, MA & NWS WFO Albany, NY





## Aug 2022 Temperatures



9/8/2022 12:26 PM



## Boston/Norton MA WEATHER FORECAST OFFICE



# Aug 2022 Rainfall



9/8/2022 12:26 PM



## Boston/Norton MA WEATHER FORECAST OFFICE



# Aug 2022 Rainfall



9/8/2022 12:26 PM



## Boston/Norton MA WEATHER FORECAST OFFICE



# Rainfall Tables for 2 and 3 Months

CT 2-month Jul-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	4.67	-4.30	52	8.97
Hartford	6.10	-2.81	68	8.91
Tolland	7.18	-0.72	91	7.90
Windham	6.09	-2.34	72	8.43
Fairfield	3.76	-4.96	43	8.72
New Haven	5.14	-2.84	64	7.98
Middlesex	5.26	-3.14	63	8.40
New London	4.23	-3.96	52	8.19

CT 3-month Jun-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	7.66	-5.92	56	13.58
Hartford	9.41	-4.13	70	13.54
Tolland	10.29	-2.19	82	12.48
Windham	10.28	-2.49	81	12.77
Fairfield	7.76	-5.39	59	13.15
New Haven	8.69	-3.69	70	12.38
Middlesex	8.95	-4.41	67	13.36
New London	7.92	-4.34	65	12.26

9/8/2022 12:26 PM



## Boston/Norton MA WEATHER FORECAST OFFICE



# Rainfall Tables for 5 and 6 Months

CT 5-month Apr-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	18.03	-4.15	81	22.18
Hartford	17.42	-4.84	78	22.26
Tolland	17.71	-3.48	84	21.19
Windham	15.48	-5.90	72	21.38
Fairfield	16.50	-5.48	75	21.98
New Haven	16.79	-4.20	80	20.99
Middlesex	15.96	-6.04	73	22.00
New London	13.76	-6.82	67	20.58

CT 6-month Mar-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	20.98	-5.36	80	26.34
Hartford	20.17	-6.20	76	26.37
Tolland	20.69	-4.84	81	25.53
Windham	18.22	-7.61	71	25.83
Fairfield	19.26	-7.08	73	26.34
New Haven	19.85	-5.49	78	25.34
Middlesex	19.06	-7.29	72	26.35
New London	16.83	-8.62	66	25.45



## Boston/Norton MA WEATHER FORECAST OFFICE



# Early Sept Rainfall





0.01 0.1 0.25 0.5 1 1.5 2 2.5 3 4 5 6 8 Stations from the following networks used: WBAN, COOP, FAA, GHCN, ThreadEx, CoCoRaHS, WMO, ICAO, NWSLI, Midwestern Regional Climate Center cli-MATE: MRCC Application Tools Environment Generated at: 9/7/2022 3:12:51 PM CDT

9/8/2022 12:26 PM



## Boston/Norton MA WEATHER FORECAST OFFICE

Accumulated Precipitation (in)

September 01, 2022 to September 07, 2022



# CPC Outlook for September



9/8/2022 12:26 PM











### Connecticut Precipitation National Weather Service Offices Boston/Norton MA, Albany NY, Upton NY Preliminary Precipitation Data (inches) by County Precipitation Data Through August 2022 Includes CoCoRaHS data

CT 1-Month August 2022	Rainfall	Departure	Percent	Normal
Litchfield	2.01	-2.38	46	4.39
Hartford	3.27	-1.07	75	4.34
Tolland	4.26	0.29	107	3.97
Windham	4.08	-0.09	98	4.17
Fairfield	1.33	-3.12	30	4.45
New Haven	3.38	-0.57	86	3.95
Middlesex	4.02	0.00	100	4.02
New London	3.25	-1.22	73	4.47

CT 2-month Jul-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	4.67	-4.30	52	8.97
Hartford	6.10	-2.81	68	8.91
Tolland	7.18	-0.72	91	7.90
Windham	6.09	-2.34	72	8.43
Fairfield	3.76	-4.96	43	8.72
New Haven	5.14	-2.84	64	7.98
Middlesex	5.26	-3.14	63	8.40
New London	4.23	-3.96	52	8.19

CT 3-month Jun-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	7.66	-5.92	56	13.58
Hartford	9.41	-4.13	70	13.54
Tolland	10.29	-2.19	82	12.48
Windham	10.28	-2.49	81	12.77
Fairfield	7.76	-5.39	59	13.15
New Haven	8.69	-3.69	70	12.38
Middlesex	8.95	-4.41	67	13.36
New London	7.92	-4.34	65	12.26

CT 4-month May-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	11.75	-6.23	65	17.98
Hartford	11.93	-6.02	66	17.95
Tolland	12.70	-3.88	77	16.58
Windham	11.55	-5.24	69	16.79
Fairfield	11.18	-6.36	64	17.54
New Haven	11.48	-5.14	69	16.62
Middlesex	11.40	-6.18	65	17.58
New London	10.29	-5.74	64	16.03

CT 5-month Apr-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	18.03	-4.15	81	22.18
Hartford	17.42	-4.84	78	22.26
Tolland	17.71	-3.48	84	21.19
Windham	15.48	-5.90	72	21.38
Fairfield	16.50	-5.48	75	21.98
New Haven	16.79	-4.20	80	20.99
Middlesex	15.96	-6.04	73	22.00
New London	13.76	-6.82	67	20.58

CT 6-month Mar-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	20.98	-5.36	80	26.34
Hartford	20.17	-6.20	76	26.37
Tolland	20.69	-4.84	81	25.53
Windham	18.22	-7.61	71	25.83
Fairfield	19.26	-7.08	73	26.34
New Haven	19.85	-5.49	78	25.34
Middlesex	19.06	-7.29	72	26.35
New London	16.83	-8.62	66	25.45

CT 7-month Feb-Aug 22	Rainfall	Departure	Percent	Normal	
Litchfield	25.61	-4.05	86	29.66	
Hartford	24.69	-4.95	83	29.64	
Tolland	25.42	-3.46	88	28.88	
Windham	24.33	-4.79	84	29.12	
Fairfield	22.81	-6.62	77	29.43	
New Haven	23.97	-4.53	84	28.50	
Middlesex	24.67	-5.02	83	29.69	
New London	22.15	-6.71	77	28.86	

CT 12-month Sep 21-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	48.51	-2.21	96	50.72
Hartford	45.75	-5.09	90	50.84
Tolland	46.88	-3.18	94	50.06
Windham	46.62	-3.55	93	50.17
Fairfield	44.70	-5.51	89	50.21
New Haven	45.91	-2.78	94	48.69
Middlesex	46.87	-4.29	92	51.16
New London	43.31	-6.58	87	49.89

CT 24-month Sep 20-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	103.35	1.91	102	101.44
Hartford	103.85	2.16	102	101.69
Tolland	108.28	8.16	108	100.13
Windham	103.79	3.44	103	100.35
Fairfield	94.96	-5.46	95	100.42
New Haven	98.42	1.04	101	97.38
Middlesex	100.80	-1.52	99	102.32
New London	94.26	-5.53	94	99.79

CT 36-month Sep 19-Aug 22	Rainfall	Departure	Percent	Normal
Litchfield	150.35	-1.81	99	152.16
Hartford	146.95	-5.58	96	152.53
Tolland	153.98	3.79	103	150.19
Windham	149.56	-0.96	99	150.52
Fairfield	141.53	-9.10	94	150.63
New Haven	145.51	-0.55	100	146.06
Middlesex	148.36	-5.12	97	153.48
New London	140.18	-9.50	94	149.68

County-based monthly precipitation totals are calculated using an average of all available full-month precipitation totals within that County from the following networks: Community Collaborative Rain, Hail and Snow network (CoCoRaHS), Cooperative Weather Observer Program (Coop), and Automated Surface Observing Systems (ASOS) data.

Coop and ASOS sites are part of National Weather Service networks. CoCoRaHS is a community-based network of volunteers that report precipitation.

County-based monthly normals were calculated using 30-year precipitation normals from NOAA/National Centers for Environmental Information (NCEI) for the period of 1981-2010. Monthly normals from 42 stations (consisting of Coop and ASOS stations) were grouped by County to calculate a single monthly normal for each County.



Map 1. Palmer Drought Index Map For The Week Ending August 27, 2022. From the Climate Pediction Center. Values for individual climate regons follow: Northwest -3.95, Central -3.43 and Coastal -4.80. Values may not be fully representative.



Map 2. U.S. Drought Monitor zoom-in on CT, effective 8/30/2022.



Map 3. U.S. Drought Monitor for Northeast US, effective 8/30/2022.

### Division of Emergency Management and Homeland Security: Long-Range Precipitation Outlook Provided via email on 9/08/2022 by Doug Glowacki, DEMHS

Shown below is the GFS forecast rainfall for the next 14 days. In general the GFS is forecasting between 0.5'' - 1.0'' of rainfall which is slightly below normal. Most of the rainfall in the forecast is predicted to occur next Monday and the following Friday from two small low pressure systems hugging the U.S. East Coast.



## U.S. Geological Survey

Status of streamflow and groundwater levels, as of August 31, 2022



Provisional Data, Subject to Review and Revision

**USGS** 

			Number of wells	Number of wells			
		Number of	below normal	below normal			
		wells	for 2 or more	for 4 or more	Percent		
		below	consecutive	consecutive	below	Percent	Percent
Name	total	normal	months	months	normal	stage 2	stage 3
Fairfield	11	10	4	2	90.9	36.4	18.2
Hartford	10	8	6	4	80	60	40
Litchfield	5	4	3	2	80	60	40
Middlesex	7	7	5	1	100	71.4	14.3
New Haven	13	7	6	2	53.8	46.2	15.4
New London	5	5	4	2	100	80	40
Tolland	12	10	9	6	83.3	75	50
Windham	6	6	5	5	100	83.3	83.3

## END OF AUGUST 2022 GROUNDWATER SUMMARY BY COUNTY



## Sites with End of August Groundwater Levels Below the Minimum Median August Water Level





			Number of	Number of			
			streamgages	streamgages			
		Number of	below normal	below normal			
		streamgages	for 2 or more	for 4 or more	Percent		
		below	consecutive	consecutive	below	Percent	Percent
Name	total	normal	months	months	normal	stage 2	stage 3
Fairfield	13	9	8	0	69.2	61.5	0
Hartford	11	7	6	0	63.6	54.5	0
Litchfield	10	9	7	0	90	70	0
Middlesex	4	4	3	0	100	75	0
New Haven	8	7	6	0	87.5	75	0
New London	7	6	6	2	85.7	85.7	28.6
Tolland	3	3	3	1	100	100	33.3
Windham	10	9	9	4	90	90	40

## AUGUST 2022 STREAMFLOW SUMMARY BY COUNTY



## **Record or near record 7-day low flows**

Summary of Recent 7 day Average Flow Conditions

		["", no	oata; *>*, gr	eater than all historica	i minimum value	5]	Hi	storical ann	ual
				2022-08-01 to	2022-08-31		mini	mum 7-day	flows
			No. of	Lowest 7-d	ay average f	low			No. of
USGS station number	USGS USGS Dra station station ar number name [m	Drain. area [mi <sup>2</sup> ]	days with zero flows	Date	Stream flow [ft <sup>3</sup> /s]	Rank	No. of years	Min. (year) [ft <sup>3</sup> /s]	years with zero flows
01206900	NAUGATUCK RIVER AT THOMASTON, CT	99.8	0	2022-08-22	6.33	1	57	7.03 (2016)	0
011230695	SHETUCKET RIVER AT TAFTVILLE, CT	512	0	2022-08-24	37.6	1	18	38.9 (1995)	0
011277905	LATIMER BROOK NR I-95N EXIT 75 NR FLANDERS, CT	17.6	0	2022-08-16	0.4	1	7	1.4 (2015)	0
01186500	STILL RIVER AT ROBERTSVILLE, CT	85.0	0	2022-08-22	4.55	2	67	2.06 (1995)	0
01121000	MOUNT HOPE RIVER NEAR WARRENVILLE, CT	28.6	0	2022-08-20	0.28	Tie 2	77	0.06 (2005)	0
01127500	YANTIC RIVER AT YANTIC, CT	89.3	0	2022-08-12	3.29	3	87	3.03 (1963)	0
01123000	LITTLE RIVER NEAR HANOVER, CT	30.0	0	2022-08-21	3.86	3	67	3.01 (2015)	0
01172010	CONNECTICUT R AT I-391 BRIDGE AT HOLYOKE, MA	8332	0	2022-08-19	1830	3	15	1680 (2007)	0
01121330	FENTON RIVER AT MANSFIELD, CT	18.3	0	2022-08-21	0.42	3	13	0.32 (2007)	0
01120790	NATCHAUG RIVER AT MARCY RD. NEAR CHAPLIN, CT	66.5	0	2022-08-21	1.56	3	11	0.96 (2007)	0
01119382	WILLIMANTIC RIVER AT MERROW RD. NEAR MERROW, CT	96.3	0	2022-08-18	9.21	3	9	4.99 (2016)	0
01194500	EAST BRANCH EIGHTMILE RIVER NEAR NORTH LYME, CT	22.3	0	2022-08-20	0.28	Tie 3	61	0.16 (1944)	0

https://waterwatch.usgs.gov/index.php?id=wwdrought



## Surface Reservoir Capacity Measurements and Trends 9/2/2022 Update

USDM reduced D3 Extreme Drought in Eastern 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:



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



- The gray bars indicate last week's measurements and the colored bar is the current measurement. In non-drought conditions, the graph above would have all of the systems in the >=100% of normal column (n=34).
- **4 system's short-term week to week trend is upward** (+**2 since last week**). 28 systems are trending downward in capacity from their previous measurements (-1 since last week). 2 systems have had no change in capacity (-1 since last week).



- Four systems have reported they are in the first stage of their drought plan. Several systems are requesting voluntary and mandatory water use conservation.
- US Drought Monitor: D3 Extreme Drought has shrunk down to only part of the southeast corner of New London County since last week. D2 Severe Drought has been expanded along the shoreline.



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

• Between August 24<sup>th</sup> and August 30<sup>th</sup>, the state experienced much needed rain in the central, northern, and eastern areas of CT (Map 1). The 30-day Percent of Normal Precipitation map shows some positive impacts from the recent rain (Map 2). The long-term trend over the last 90-days still shows dryness across the state with the Percent of Normal Precipitation between 50% and 100% (Map 3). Streamflow and groundwater continue to indicate much below normal conditions across the state. Some streams and groundwater show some improvement in the areas that received the most recent rainstorms.



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	Historical Average	Percent of Normal	Previous Date	Previous Percent Full	County_Served
CT1030011	Norwalk First Taxing District	8/28/2022	51.90	Approaching Trigger Level	↓	76.70	68	8/21/2022	56.20	FAIRFIELD
CT1030021	South Norwalk Electric & Water	8/29/2022	56.40	Approaching Trigger Level	↓	71.80	79	8/22/2022	61.30	FAIRFIELD
CT0150011	Aquarion Water Co of CT-Main System	8/14/2022	78.00	No Drought Stage	↓	86.50	90	8/7/2022	80.90	FAIRFIELD
CT0570011	Aquarion Water Co of CT-Greenwich Syster	8/14/2022	72.40	No Drought Stage	↓	78.20	93	8/7/2022	77.10	FAIRFIELD
CT1350011	Aquarion Water Co of CT-Stamford	8/14/2022	72.90	No Drought Stage	↓	77.00	95	8/7/2022	76.50	FAIRFIELD
CT0340011	Danbury Water Department	8/14/2022	80.00	No Drought Stage	↓	82.30	97	8/7/2022	82.00	FAIRFIELD
CT0090011	Bethel Water Dept	8/28/2022	95.70	No Drought Stage	<u>↓</u>	94.50	101	8/21/2022	96.30	FAIRFIELD
CT0473011	CTWC - Northern Reg-Western System	8/25/2022	62.10	No Drought Stage	↓	82.70	75	8/18/2022	62.60	HARTFORD
CT0770021	Manchester Water Department	8/28/2022	72.30	Drought Alert	↓	85.80	84	8/21/2022	73.90	HARTFORD
CT1310011	Southington Water Department	8/27/2022	59.90	No Drought Stage	1	70.20	85	8/20/2022	59.80	HARTFORD
CT0170011	Bristol Water Department	8/21/2022	77.70	No Drought Stage	↓	84.50	92	8/14/2022	82.70	HARTFORD
CT0890011	New Britain Water Department	8/25/2022	67.40	Approaching Trigger Level	↓	73.10	92	8/18/2022	69.50	HARTFORD
CT0640011	Metropolitan District Commission	8/29/2022	87.90	No Drought Stage	<u>↓</u>	89.70	98	8/22/2022	88.40	HARTFORD
CT1220011	Aquarion Water Co of CT-Salisbury Sys	8/14/2022	52.20	No Drought Stage	↓	88.80	59	8/7/2022	61.60	LITCHFIELD
CT1430011	Torrington Water Company	8/26/2022	57.00	No Drought Stage	↓	78.90	72	8/19/2022	58.40	LITCHFIELD
CT0980011	Aquarion Water Co of CT-Norfolk System	8/14/2022	89.00	No Drought Stage	↓	98.00	91	8/7/2022	91.20	LITCHFIELD
CT1620011	Winsted Water Works	8/28/2022	90.30	No Drought Stage	1	95.40	95	8/21/2022	88.90	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	8/28/2022	66.80	No Drought Stage	↓	82.80	81	8/21/2022	67.70	MIDDLESEX
CT0261031	CTWC - Shoreline Region-Chester System	8/25/2022	77.20	No Drought Stage	↓	87.50	88	8/18/2022	82.90	MIDDLESEX
CT0830021	Connecticut Valley Hospital	8/22/2022	91.00	No Drought Stage	1	91.70	99	8/15/2022	90.60	MIDDLESEX
CT0608011	CTWC - Shoreline Region-Guilford System	8/25/2022	55.80	Drought Watch	↓	79.10	71	8/18/2022	58.10	NEW HAVEN
CT1510011	Waterbury Water Department	8/21/2022	67.90	No Drought Stage	↓	87.50	78	8/14/2022	70.50	NEW HAVEN
CT0800011	Meriden Water Division	8/29/2022	70.50	No Drought Stage	↓	84.10	84	8/7/2022	74.10	NEW HAVEN
CT0880011	CTWC - Naugatuck Region-Central System	8/25/2022	77.70	No Drought Stage	↓	86.70	90	8/18/2022	81.60	NEW HAVEN
CT0930011	Regional Water Authority	8/21/2022	75.80	No Drought Stage		79.90	95	8/14/2022	78.00	NEW HAVEN
CT1480011	Wallingford Water Department	8/26/2022	80.80	No Drought Stage	$\checkmark$	80.40	101	8/19/2022	82.00	NEW HAVEN
CT1370011	Aquarion Water Co of CT-Mystic	8/22/2022	52.30	No Drought Stage		81.80	64	8/14/2022	58.80	NEW LONDON
CT0580011	Jewett City Water Company	8/22/2022	70.10	No Drought Stage	↓	85.10	82	8/15/2022	72.10	NEW LONDON
CT0950011	New London Dept. of Public Utilities	8/28/2022	58.30	Drought Advisory	↓	68.60	85	8/21/2022	59.40	NEW LONDON
CT1040011	Norwich Public Utilities	8/27/2022	72.40	Water Supply Advisory	↓	84.90	85	8/20/2022	74.30	NEW LONDON
CT0590011	Groton Utilities	8/22/2022	82.80	No Drought Stage	$\checkmark$	85.80	97	8/15/2022	84.60	NEW LONDON
CT1340011	CTWC - Northern Reg-Stafford System	8/25/2022	89.80	No Drought Stage	1	95.60	94	8/18/2022	89.60	TOLLAND
CT1630011	Windham Water Works	8/28/2022	100.00	Approaching Trigger Level		100.00	100	8/21/2022	100.00	WINDHAM
			73.89			84.41	87.54	Ave	e Percent of Normal by County	

$\uparrow$	-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

89.00 FAIRFIELD 87.67 HARTFORD 84.60 LITCHFIELD 89.33 MIDDLESEX 86.50 NEW HAVEN 82.60 NEW LONDON 94.00 TOLLAND

4 14 16

2

## DROUGHT CONSERVATION REQUESTS

- Norwalk Mayor declared drought advisory citywide on Friday 7/15
  - Asked residents to conserve water and stopped city field irrigation
- Norwalk 1<sup>st</sup> and 2<sup>nd</sup> Taxing District water systems are both approaching their 1<sup>st</sup> Drought trigger
- CTWC requests <u>all customers</u> to conserve water (60 towns, 105,000 customers), in addition to a request for 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 18, 2022, has implement 10% conservation measures. Reservoir is still at 100% full. Reporting that they are approaching their 1<sup>st</sup> drought trigger.
- Hazardville Water Company urges customers to conserve water. Serves Hazardville, East Windsor, and Somers.
  - <u>https://www.hazardvillewater.com/</u>
- Putnam has removed the mandatory conservation and is moving to voluntary conservation.
- East Lyme instituting mandatory conservation.
- Aquarion Water Company instituting mandatory irrigation restrictions for the towns of Darien, Fairfield, Greenwich, New Canaan, Newtown, Stamford, Westport, East Granby, Granby, Simsbury, Groton, Mystic, and Stonington.
- Danbury has declared a water emergency and is requesting the use of Lake Kenosia diversion. Mandatory conservation requested

## **Declared Drought Stages**

- Norwich 1<sup>st</sup> drought stage Water Supply Advisory. Requesting 10% voluntary conservation
- UCONN on August 1, 2022 **Stage II** Water Supply Watch and requested mandatory and voluntarily conservation.
- CTWC Guildford System 1<sup>st</sup> drought stage Drought Watch
- New London 1<sup>st</sup> drought stage Drought Advisory
   approaching 2<sup>nd</sup> drought trigger.
- Manchester Water Dept 1<sup>st</sup> drought stage Drought Alert
- New Britain 1<sup>st</sup> stage Drought Watch

## 24 Permits Reported

## **Private Wells**

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

Town	Total Permits
Canterbury	1
Eastford	2
Hampton	2
Killingly	4
Monroe	3
Plainfield	2
Pomfret	1
Prospect	2
Putnam	1
Sterling	1
Thompson	1
Wolcott	3
Woodstock	1
Total	24

Bulk Water Hauling Dry Well Resupply				
Town	Total			
Chaplin	1			
Bolton	1			
Total	2			



### Water Resources, Fisheries, and Forestry Conditions Report Provided on 9/08/2022 by Doug Hoskins Department of Energy and Environmental Protection

Water Diversion / Resource Concerns -

• A private golf course has made a request to make up for their lost irrigation well yield by activating an existing potable water supply interconnection with a water company. This interconnection goes directly into their irrigation pond which would require a discharge permit from us as it would be a discharge of a pollutant into waters of the state. We have concerns about issuing such a permit due to the dwindling public water supplies and the relatively low socio-economic benefit gained by its use under these circumstances. We'll be discussing with them some other options that could meet their needs.

Fisheries impacts-

• This week's rainfall improved flows throughout the state, including on the West Branch and main stem Farmington rivers and we were able to stop our reservoir releases into the West Branch for at least a few days as inputs from the Still River increased sufficiently. However, we project that it's likely that we'll need to begin augmenting again early next week.

Fire danger-

• Recent rains have dropped fire danger back to "Low" statewide. It is difficult to determine how long that rating will last. Wetting rains, vegetation transition stages and the increase in available flashy fuels with leaf drop, will continue to be major influences affecting Fire Danger ratings moving into the fall.

### **Department of Agriculture – Drought Status Report**

	Reported Conditions				
Parameter		As of 6/2/22	As of 9/08/22		
	Report Date	Status	Report Date	Status	
Palmer Drought Severity Index (map)	8/4/2022	n/a (data error)	9/3/2022	Entire state in Severe Drought, NW CT and Eastern CT in Extreme Drought	
Palmer drought severity index (data)	8/4/2022	n/a	9/3/2022	Northwest: -4.18 Central: -3.74 Coastal: -4.98	
Precipitation needed to end drought (in.)	8/4/20222	n/a	9/3/2022	Northwest: 11.47 Central: 10.35 Coastal: 15.18	
Crop Moisture (current map)	7/30/2022	Entire state shows slightly dry	9/3/2022	Entire state shows slightly dry, NW CT shows abnormally dry	
Topsoil moisture (current map)	7/31/2022	Data indicates "10%" but likely an error. Topsoil in CT is most likely <b>40-60%</b> short or very short on moisture (see map)	9/4/2022	0%, likely a data error. Entire state should show "very dry"	
Topsoil moisture (current vs. 5 yr. mean)	7/31/2022	Data for CT incomplete	9/4/2022	5-year mean is 14 (data is incorrect)	
Veg DRI (% of CT land area shown as pre-drought, moderate, severe or extreme)	8/4/2022	<ul> <li>10.7% of the state is in severe drought or higher</li> <li>50.9% of the state is in moderate drought or higher</li> </ul>	9/8/2022	Data incomplete, last entry was 7/31/22	
Drought Monitor Report for CT	8/2/2022	As of 8/2, <b>26.2%</b> of the state was in severe drought or higher, mostly in Windham and New London Counties. <b>68%</b> of land is in Moderate Drought, extending through Tolland, Middlesex, Hartford, and Litchfield Counties. New Haven County stays abnormally dry.	9/8/2022	Entire State shows moderate drought, western CT shows Severe Drought extending through the Farmington Valley. SE corner of CT shows Extreme Drought (Stonington)	
NASS Crop Progress Report (New England)	7/31/2022	According to the National Agricultural Statistics Service in New England, there were 6 days suitable for fieldwork for the week ending Sunday, July 31, 2022. Topsoil moisture supplies were <b>18</b> % very short, <b>21</b> % short, <b>58</b> % adequate, and <b>3</b> % surplus. Subsoil moisture supplies were <b>14</b> % very short, <b>22</b> % short, <b>63</b> % adequate, and <b>1</b> % surplus		According to the National Agricultural Statistics Service in New England, there were 5 days suitable for fieldwork for the week ending Sunday, September 4, 2022. Topsoil moisture supplies were 4 percent very short, 10 percent short, 80 percent adequate, and 6 percent surplus. Subsoil moisture supplies were 3 percent very short, 22 percent short, 72 percent adequate, and 3 percent surplus.	

**Summary:** Some data incorrect or incomplete. Data from all of these indicators showed drought conditions slightly improved in eastern CT heading into the week of September 12th. Dry conditions were observed in central CT, suggesting an emerging drought on the western side of the CT river valley and New Haven County.

#### mbExplanatory notes:

Palmer Drought Severity Index: The Palmer Drought Severity Index (PDSI) uses readily available temperature and precipitation data to estimate relative dryness. It is a standardized index that generally spans -10 (dry) to +10 (wet). Maps of operational agencies like NOAA typically show a range of -4 to +4, but more extreme values are possible.

Crop moisture index: The CMI gives the short-term or current status of purely agricultural drought or moisture surplus and can change rapidly from week to week. The CMI index indicates general conditions and not local variations caused by isolated rain. Input to the calculations include the weekly precipitation total and average temperature, division constants (water capacity of the soil, etc.) and previous history of the indices.

Topsoil moisture: Topsoil Moisture Monitoring maps are based on United States Department of Agriculture state reports of topsoil moisture conditions. Means are calculated from historical weekly data published by USDA/NASS using the closest date to the equivalent date for the year. Results are based on the short and very short % ages of topsoil moisture (upper 6 inches) reported by the USDA. Reports are based on subjective observations.

Vegetation Drought Response Index: VegDRI calculations integrate satellite-based observations of vegetation conditions, climate data, and other biophysical information such as land cover/land use type, soil characteristics, and ecological setting. The VegDRI maps that are produced deliver continuous geographic coverage over large areas, and have inherently finer spatial detail (1-km2 resolution) than other commonly available drought indicators such as the U.S. Drought Monitor. The state statistics table is located here: <a href="https://vegdri.unl.edu/Home/VegDRITables.aspx?CT">https://vegdri.unl.edu/Home/VegDRITables.aspx?CT</a>.







Results are based on the short and very short percentages of topsoil moisture (upper 6 inches) reported by the USDA. Reports are based on subjective observations.

Current Vs. 5-Year Mean Weekly Value for Period Ending Sep 04, 2022 65 73.2 0 48 85 44.2 29 70.2 71 12 21 84 49 25 65 14 65 28 69.8 28 32 41.2 14.8 75 13 39.8 00 63.2 59 46 84 24 15.2 55 39 0 32.6 17 30 40 54 57 14 31 35.6 5.4 40 72 *(***12** 55.8 39 86 99 77 52 44.8 (**17.2** 19 29 53 32.6 21 29.6 22.6 43 26 26 71 10 17 46 37 40 11.2 61.8 27.8 36.6 11 13 28 30.6 15.4 44 <mark>61</mark> 23.8 4 Current 19 5-Year Mean 8 Drier Than 5-Year Mean Means are calculated from historical weekly data published by USDA/NASS using the closest date to the equivalent Wetter Than 5-Year Mean date for this year. Equal to 5-Year Mean Results are based on the short and very short percentages of topsoil moisture (upper 6 inches) reported by the USDA. Reports are based on subjective observations. Insufficient Data

## USDA Topsoil Moisture by Short-Very Short

### **Vegetation Drought Response Index**

**Complete: Connecticut** 

### July 31, 2022



## U.S. Drought Monitor Connecticut

### September 6, 2022

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



	Drought Conditions (Percent Area)								
		None	D0-D4	D1-D4	D2-D4	D3-D4	D4		
	Current	0.00	100.00	100.00	45.90	0.29	0.00		
	Last Week 08-30-2022	0.00	100.00	100.00	100.00	2.01	0.00		
	3 Month s Ago 06-07-2022	43.54	56.46	21.21	0.00	0.00	0.00		
	Start of Calendar Year 01-04-2022	100.00	0.00	0.00	0.00	0.00	0.00		
	Start of Water Year 09-28-2021	100.00	0.00	0.00	0.00	0.00	0.00		
	One Year Ago 09-07-2021	100.00	0.00	0.00	0.00	0.00	0.00		

#### Intensity:

None D0 Abnormally Dry

D2 Severe Drought D3 Extreme Drought D1 Moderate Drought D4 Exception al 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

Author: David Simeral

Western Regional Climate Center

