### **Drought Conditions Report**

September 17, 2020

Connecticut Water Planning Council Interagency Drought Workgroup

|                                      |   | Sta                          | ge 2 Drought T            | rigger Summa                 | ry by Region                 | - September 17               | , 2020                    |                             |                           |                   |
|--------------------------------------|---|------------------------------|---------------------------|------------------------------|------------------------------|------------------------------|---------------------------|-----------------------------|---------------------------|-------------------|
|                                      | Stage 2 Trigger                                   | Fairfield                    | Hartford                  | Litchfield                   | Middlesex                    | New Haven                    | New London                | Tolland                     | Windham                   | Data of<br>Record |
| Precipitation (1)                    | Two-month total below<br>65% of normal            | 105% of normal               | 50% of normal             | 80% of normal                | 81% of normal                | 84% of normal                | 54% of normal             | 68% of normal               | 59% of normal             | 8/31/2020         |
| <u>Ground Water (2)</u>              | Two out of three months below the 25th percentile | 18% stations<br>meet trigger | 40% stations meet trigger | 60% stations meet trigger    | 57% stations<br>meet trigger | 8% stations meet<br>trigger  | 40% stations meet trigger | 8% stations meet<br>trigger | 67% meet trigger          | 8/31/2020         |
| <u>Streamflow (3)</u>                | Two out of three months below the 25th percentile | 7% meet trigger              | 73% stations meet trigger | 50% stations<br>meet trigger | 25% stations meet trigger    | 43% stations<br>meet trigger | 20% stations meet trigger | 0% stations meet<br>trigger | 40% stations meet trigger | 8/31/2020         |
| <u>Reservoirs (4)</u>                | Average levels less than 80% of normal            | 88% of normal                | 81% of normal             | 91% of normal                | 86% of normal                | 87.5% of normal              | 92% of normal             | 82% of normal               | 100% of normal            | 9/16/2020         |
| Palmer Drought<br>Severity Index (5) | -2.0 to -2.99                                     | -2.0 to -2.99                | -2.0 to -2.99             | -3.0 to -3.9                 | -2.0 to -2.99                | -2.0 to -2.99                | -2.0 to -2.99             | -2.0 to -2.99               | -2.0 to -2.99             | 8/29/2020         |
| <u>Crop Moisture</u><br>Index (6)    | -1.0 to –1.99                                     | -0.84 to -1.85               | -1.85                     | -1.32                        | -0.84 to -1.85               | -0.84 to -1.85               | -0.84 to -1.85            | -1.85                       | -1.85                     | 9/12/2020         |
| VegDRI (seasonal)<br>(7)             | Pre-drought stress                                | 25-75% of region             | >75% of region            | >75% of region               | >75% of region               | 25-75% of region             | >75% of region            | >75% of region              | >75% of region            | 9/13/2020         |
| <u>Fire Danger (8)</u>               | Moderate  | Moderate or<br>above         | Moderate or<br>above      | Moderate or<br>above         | Moderate or<br>above         | Moderate or<br>above         | Moderate or<br>above      | Moderate or<br>above        | Moderate or<br>above      | 9/16/2020         |
| <u>U.S. Drought</u><br>Monitor (9)   | Intensity level D1-D2                             | N-D0                         | D1-D2                     | D0-D1                        | D0-D1                        | N-D0                         | D1-D2                     | D1-D2                       | D1-D2                     | 9/10/2020         |

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

#### 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 partially meeting trigger when greater than 25% and less than 65% 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. 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 partially 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. 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 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.

(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 Drough                | t Trigger Sum                 | mary by Regio                 | n September                   | 17, 2020                      |                               |                               |                |
|--------------------------------------|---|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|----------------|
|                                      | Stage 3 Trigger                                   | Fairfield                     | Hartford                      | Litchfield                    | Middlesex                     | New Haven                     | New London                    | Tolland                       | Windham                       | Data of Record |
| Precipitation (1)                    | Three-month total below<br>65% of normal          | 84% of normal                 | 46% of normal                 | 69% of normal                 | 62% of normal                 | 74% of normal                 | 58% of normal                 | 63% of normal                 | 62% of normal                 | 8/31/2020      |
| <u>Ground Water (2)</u>              | Four consecutive months below the 25th percentile | ≤25% stations<br>meet trigger | 8/31/2020      |
| Streamflow (3)                       | Four out of five months below the 25th percentile | ≤25% stations<br>meet trigger | 8/31/2020      |
| <u>Reservoirs (4)</u>                | Average levels less than 70% of normal            | 88% of normal                 | 81% of normal                 | 91% of normal                 | 86% of normal                 | 87.5% of normal               | 92% of normal                 | 82% of normal                 | 100% of normal                | 9/16/2020      |
| Palmer Drought<br>Severity Index (5) | -3.0 to -3.99                                     | -2.0 to -2.99                 | -2.0 to -2.99                 | -3.0 to -3.9                  | -2.0 to -2.99                 | 8/29/2020      |
| Crop Moisture<br>Index (6)           | -2.0 to -2.99                                     | -0.84 to -1.85                | -1.85                         | -1.32                         | -0.84 to -1.85                | -0.84 to -1.85                | -0.84 to -1.85                | -1.85                         | -1.85                         | 9/12/2020      |
| VegDRI (seasonal)<br>(7)             | Moderate drought conidtions                       | <25% of region                | 25-75% of region              | >75% of region                | 25-75% of region              | <25% of region                | >75% of region                | 25-75% of region              | >75% of region                | 9/13/2020      |
| Fire Danger (8)                      | High  | High or above                 | 9/16/2020      |
| <u>U.S. Drought</u><br>Monitor (9)   | Intensity level D2-D3                             | N-D0                          | D1-D2                         | D0-D1                         | D0-D1                         | N-D0                          | D1-D2                         | D1-D2                         | D1-D2                         | 9/10/2020      |

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

#### 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 partially meeting trigger when greater than 25% and less than 65% of stations in the region meet the threshold. 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. 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 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.

(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.

Connecticut Interagency Drought Workgroup Meeting September 17, 2020 NWS Boston/Albany Summary

#### Precipitation:

Rainfall totals for September 1 to 16 were below normal for all of the State except for far southwest CT in the vicinity of Bridgeport, where rainfall was near normal to above normal.

The driest area of the State extended from central Litchfield County through much of north central and eastern CT. Rainfall here was under an inch, and around or less than 50% of normal rainfall MTD.

In far northern Hartford County, far northern and southern Litchfield County, and south central to southwest CT, rainfall month to date ranged from 0.75 inch to 1.5 inch, with localized higher totals of 1 to 2.5 inches near Bridgeport. Rainfall totals MTD were mainly 50 to 75 percent of normal, except 75% to 125% of normal near Bridgeport.

The weather pattern favors below average rainfall during the next 7 days with the forecast of under a half inch of rainfall. Odds favor below normal rainfall during the 8 to 14 day outlook, spanning from September 23 to 29.

#### Temperatures:

Temperatures from September 1 to 15 averaged above normal across Connecticut, with departures 1 to 3 degrees above normal. However since September 11, temperatures have been near or below normal.

Temperatures are expected to average above normal during Thursday, then fall below normal from Thursday night through next Tuesday. Then above normal temperatures are expected to average above normal during September 23 to 29. Temperatures then average cooler than normal during the first week of October.

# **NWS Conditions Update**

Connecticut Interagency Drought Workgroup Meeting National Weather Service Boston MA and Albany NY September 17th 2020



# September 1-16 2020 Rainfall

Accumulated Precipitation (in) September 01, 2020 to September 16, 2020





0.010.05 0.1 0.2 0.3 0.5 0.75 1 1.5 2 2.5 3 4 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: 9/16/2020 11:09:28 AM CDT Accumulated Precipitation (in): Departure from 1981-2010 Normals

September 01, 2020 to September 16, 2020





Midwestern Regional Climate Center cli-MATE: MRCC Application Tools Environment

Generated at: 9/16/2020 11:11:52 AM CDT

Accumulated Precipitation (in): Percent of 1981-2010 Normals September 01, 2020 to September 16, 2020





Midwestern Regional Climate Center cli-MATE: MRCC Application Tools Environment Generated at: 9/16/2020 11:12:46 AM CDT

NORR STATES

## **Temperature Depart. from Normal- September**

Average Temperature (°F): Departure from 1981-2010 Normals

September 01, 2020 to September 16, 2020



Preliminary Data Month to Date (MTD)...

**Temperatures MTD 1-3 degrees above normal** 

Hartford, Bridgeport, Groton:

• Averaged ~1 degree above normal MTD.

Bakersville CT:

• Averaged 1.6 degrees above normal MTD.

New Haven:

• Averaged ~3 degrees above normal MTD.



### Rainfall Forecast Through 8 am Wed 9/23 Temperatures: Below normal Fri-Tue





# Outlook for Sept 23-29 2020





### Week 3-4 Outlook\*, Sept 26-Oct 9

\*Outlook updated at 3 pm EDT Friday



### **Outlook for Sep/Oct/Nov- Unchanged**





| PWSID                   | PWS Name   | Most Recent Reading Date | Percent Full | Current Status                | Trend                            | Historical Average | Percent of Normal | Previous Date | <b>Previous Percent Full</b> | County_Served |
|-------------------------|--|--------------------------|--------------|-------------------------------|----------------------------------|--------------------|-------------------|---------------|------------------------------|---------------|
| CT1030011               | Norwalk First Taxing District  | 9/13/2020                | 52.54        | Drought Watch                 | $\mathbf{+}$                     | 71.14              | 74                | 9/6/2020      | 55.78                        | FAIRFIELD     |
| CT0570011               | Aquarion Water Co of CT-Greenwich System                               | 9/6/2020                 | 51.71        | Drought Watch                 | $\downarrow$                     | 69.96              | 74                | 8/30/2020     | 54.92                        | FAIRFIELD     |
| CT1030021               | South Norwalk Electric & Water   | 9/14/2020                | 49.68        | Drought Advisory              | ↓                                | 63.25              | 79                | 9/8/2020      | 53.56                        | FAIRFIELD     |
| CT0150011               | Aquarion Water Co of CT-Main System                                    | 9/6/2020                 | 73.81        | No Drought Stage              | $\checkmark$                     | 82.33              | <b>90</b>         | 8/30/2020     | 75.76                        | FAIRFIELD     |
| CT0340011               | Danbury Water Department   | 9/4/2020                 | 76.26        | No Drought Stage              | ↓                                | 78.49              | 97                | 8/30/2020     | 77.85                        | FAIRFIELD     |
| CT1350011               | Aquarion Water Co of CT-Stamford                                       | 9/6/2020                 | 69.58        | No Drought Stage              | $\checkmark$                     | 70.90              | 98                | 8/30/2020     | 74.60                        | FAIRFIELD     |
| CT0090011               | Bethel Water Dept  | 9/13/2020                | 99.32        | No Drought Stage              | ↓                                | 93.48              | 106               | 8/30/2020     | 99.45                        | FAIRFIELD     |
| CT1310011               | Southington Water Department   | 9/12/2020                | 23.44        | No Drought Stage              | $\checkmark$                     | 63.06              | 37                | 9/5/2020      | 28.36                        | HARTFORD      |
| CT0170011               | Bristol Water Department   | 9/13/2020                | 60.67        | Drought Advisory              | ↓                                | 79.52              | 76                | 9/6/2020      | 62.63                        | HARTFORD      |
| CT0770021               | Manchester Water Department  | 9/13/2020                | 66.82        | Drought Advisory              | $\downarrow$                     | 82.11              | 81                | 9/6/2020      | 68.96                        | HARTFORD      |
| CT0473011               | CTWC - Northern Reg-Western System                                     | 9/10/2020                | 75.18        | No Drought Stage              | ↓                                | 78.20              | 96                | 9/3/2020      | 78.47                        | HARTFORD      |
| CT0890011               | New Britain Water Department   | 9/3/2020                 | 64.34        | Water Supply Alert            | $\downarrow$                     | 65.80              | 98                | 8/27/2020     | 65.51                        | HARTFORD      |
| CT0640011               | Metropolitan District Commission                                       | 9/14/2020                | 85.88        | No Drought Stage              | ↓                                | 85.82              | 100               | 9/7/2020      | 86.84                        | HARTFORD      |
| CT1220011               | Aquarion Water Co of CT-Salisbury Sys                                  | 9/6/2020                 | 54.20        | No Drought Stage              | $\downarrow$                     | 88.87              | 61                | 8/30/2020     | 56.02                        | LITCHFIELD    |
| CT1620011               | Winsted Water Works  | 9/13/2020                | 85.25        | No Drought Stage              |                                  | 93.74              | 91                | 9/6/2020      | 85.25                        | LITCHFIELD    |
| CT0980011               | Aquarion Water Co of CT-Norfolk System                                 | 9/6/2020                 | 92.68        | No Drought Stage              | 1                                | 97.73              | 95                | 8/30/2020     | 91.95                        | LITCHFIELD    |
| CT1250011               | Sharon Water & Sewer Commission  | 9/12/2020                | 100.00       | No Drought Stage              |                                  | 95.18              | 105               | 9/5/2020      | 100.00                       | LITCHFIELD    |
| CT1430011               | Torrington Water Company   | 9/4/2020                 | 77.74        | No Drought Stage              | $\downarrow$                     | 73.75              | 105               | 8/28/2020     | 79.05                        | LITCHFIELD    |
| CT0830011               | Middletown Water Department  | 9/13/2020                | 61.18        | Approaching Trigger Level     | 1                                | 75.21              | 81                | 9/7/2020      | 59.15                        | MIDDLESEX     |
| CT0261031               | CTWC - Shoreline Region-Chester System                                 | 9/10/2020                | 71.83        | No Drought Stage              | ↓                                | 85.81              | 84                | 9/3/2020      | 74.64                        | MIDDLESEX     |
| CT0830021               | Connecticut Valley Hospital  | 9/7/2020                 | 85.48        | No Drought Stage              | ↓                                | 90.58              | 94                | 8/31/2020     | 87.72                        | MIDDLESEX     |
| CT1510011               | Waterbury Water Department   | 8/30/2020                | 66.87        | No Drought Stage              | 4                                | 87.28              | 77                | 8/23/2020     | 68.53                        | NEW HAVEN     |
| CT0608011               | CTWC - Shoreline Region-Guilford System                                | 9/10/2020                | 57.42        | No Drought Stage              | ↓                                | 73.30              | 78                | 9/3/2020      | 63.47                        | NEW HAVEN     |
| CT0800011               | Meriden Water Division   | 9/7/2020                 | 63.79        | No Drought Stage              | ↓                                | 80.66              | 79                | 8/31/2020     | 65.55                        | NEW HAVEN     |
| CT0880011               | CTWC - Naugatuck Region-Central System                                 | 9/10/2020                | 78.54        | No Drought Stage              | ↓                                | 83.60              | 94                | 9/3/2020      | 79.58                        | NEW HAVEN     |
| CT0930011               | Regional Water Authority   | 9/13/2020                | 71.20        | No Drought Stage              | ↓                                | 74.10              | 96                | 9/6/2020      | 73.39                        | NEW HAVEN     |
| CT1480011               | Wallingford Water Department   | 9/11/2020                | 77.48        | No Drought Stage              | ↓                                | 76.70              | 101               | 9/4/2020      | 78.74                        | NEW HAVEN     |
| CT0580011               | Jewett City Water Company  | 9/7/2020                 | 66.36        | No Drought Stage              | ↓                                | 79.20              | 84                | 8/31/2020     | 69.42                        | NEW LONDON    |
| CT0950011               | New London Dept. of Public Utilities                                   | 9/6/2020                 | 57.01        | No Drought Stage              | ↓                                | 61.85              | 92                | 8/30/2020     | 59.92                        | NEW LONDON    |
| CT1370011               | Aquarion Water Co of CT-Mystic   | 9/6/2020                 | 75.27        | No Drought Stage              | 1                                | 81.76              | 92                | 8/30/2020     | 75.10                        | NEW LONDON    |
| CT0590011               | Groton Utilities   | 9/7/2020                 | 78.62        | No Drought Stage              | ↓                                | 82.67              | 95                | 8/31/2020     | 80.26                        | NEW LONDON    |
| CT1040011               | Norwich Public Utilities   | 9/12/2020                | 79.14        | Water Supply Advisory         | ↓                                | 79.95              | 99                | 9/5/2020      | 81.81                        | NEW LONDON    |
| CT1340011               | CTWC - Northern Reg-Stafford System                                    | 9/10/2020                | 77.80        | No Drought Stage              | $\downarrow\downarrow\downarrow$ | 94.91              | 82                | 9/3/2020      | 89.63                        | TOLLAND       |
| CT1630011               | Windham Water Works  | 9/6/2020                 | 100.00       | No Drought Stage              |                                  | 100.00             | 100               | 8/30/2020     | 100.00                       | WINDHAM       |
|                         | -  |                          | 71.38        |                               |                                  | 80.61              | 88.55             |               | Ave Percent of Normal I      | by County     |
| ↑                       | -Increase since last measurement (less than 10% increase)              |                          |              | Number of systems:            |                                  |                    |                   |               | 88.29                        | FAIRFIELD     |
| <u></u> ↑↑              | -Increase since last measurement (10% or greater increase)             |                          |              | Greater than or equal to 100  | 0% of Nor                        | mal                | 6                 |               | 81.33                        | B HARTFORD    |
| ↓                       | $\downarrow$ -Decrease since last measurement (less than 10% decrease) |                          |              | Between 90% and 99% of Normal |                                  |                    | 14                | 14            |                              | ) LITCHFIELD  |
| $\downarrow \downarrow$ | -Decrease since last measurement (10% or greater decrease)             |                          |              | Less than 90% of Normal       |                                  |                    | 14                |               | 86.33                        | 3 MIDDLESEX   |

At 100% Full

--- - Same measurement as the previous measurement

87.50 NEW HAVEN 92.40 NEW LONDON 82.00 TOLLAND 100.00 WINDHAM

2

### Lindquist, Eric

| From:    | Trowbridge, Philip   |
|----------|--|
| Sent:    | Tuesday, September 15, 2020 5:16 PM  |
| То:      | Wittchen, Bruce; Lindquist, Eric   |
| Cc:      | Fitting, Corinne; Aarrestad, Peter; Hochholzer, Helene; Hoskins, Douglas; Perry, Jennifer; Foreman,<br>William |
| Subject: | Re: Interagency Drought Workgroup Update   |

Hello Eric and Bruce,

Below are updates to DEEP's indicators for the IDW. I will be attending the meeting on Thursday for DEEP. Thank you.

**Quantitative Indicators** 

Fire Danger

• Fire Danger currently "Moderate". No new or ongoing fires to report.

Qualitative/Auxiliary Indicators Fisheries Issues

• Nothing to report

Water Diversions/Well-Field Pumping Issues

• Nothing to report

From: Trowbridge, Philip <Philip.Trowbridge@ct.gov>
Sent: Wednesday, September 2, 2020 8:53 AM
To: Wittchen, Bruce <Bruce.Wittchen@ct.gov>; Lindquist, Eric <Eric.K.Lindquist@ct.gov>
Cc: Fitting, Corinne <Corinne.Fitting@ct.gov>; Aarrestad, Peter <Peter.Aarrestad@ct.gov>; Hochholzer, Helene
<Helene.Hochholzer@ct.gov>; Coleman, William <William.Coleman@ct.gov>; Hoskins, Douglas
<Douglas.Hoskins@ct.gov>; Perry, Jennifer <Jennifer.Perry@ct.gov>
Subject: Re: Interagency Drought Workgroup Update

Hello Eric and Bruce,

Below are updates to DEEP's indicators for the IDW. Doug Hoskins will be attending the IDW meeting tomorrow for DEEP. Thank you.

Quantitative Indicators

Fire Danger

• Fire Danger currently "Moderate" for Northern counties, "Low" for Southern counties. Expects that it might go to Low statewide if we get enough rain tomorrow. There is still a concern for ground fire at this time of year under the current conditions.

Qualitative/Auxiliary Indicators Fisheries Issues

• Nothing to report

Water Diversions/Well-Field Pumping Issues