

Community Collaborative Rain, Hail & Snow Network



**Southern** 

The word 'Southern' is written in a large, bold, black font with a yellow-orange glow effect. To its right is a colorful illustration of autumn harvest items, including pumpkins, gourds, and baskets of produce.

**New England**

The words 'New England' are written in a large, bold, black font with a yellow-orange glow effect, matching the 'Southern' text above.

**November 2020**

The Zeros of September are a thing of the past, and the rains returned in October. Finally, a month with a normal amount of precipitation.

We started off the new Water Year begins with more broken Single Month reporting records. Congratulations to Connecticut and Massachusetts and Rhode Island for breaking their Single Month reporting records, which translates to a 3-state record total now over 12,700 Daily Reports.

A single day reporting record broken. With the rains, the Comments grew in numbers as well. And most of us saw our first measurable snow in late October. Please continue to make a snow fall and snow depth measurement with each of your Daily Reports.

Take a look at your own [Water Year Summary](#). Included is some trivia about our own

Within this month's Newsletter: We lead off with The Grand List Observers. More observer tips. And Joe tells us more about Condition Monitoring Reports. Let's get into it.

## **The “Grand” List**

Congratulations to all of these observers from our three states who have recently passed a milestone of 1000 Daily Reports.

### **2000 Daily Reports**

MA-PL-15     Abington 1.2 NNE

### **1000 Daily Reports**

MA-MD-104   Littleton 2.8 NNW  
MA-BR-37     Westport 0.9 ESE  
MA-FR-21     Millers Falls 0.2 SW

# **Condition Monitoring Reports During Winter**

Joe DelliCarpini – Science & Operations Officer, NWS Boston/Norton MA

Condition Monitoring Reports (CMRs) are useful to help understand the impacts of drought during the warmer months. Did you know that they are also important during the winter? CMRs help assess potential flood conditions, especially during the snow melt season, but also help identify ongoing drought conditions as we head into the spring.

What should you report during the winter? Report what you observe! What impacts are you seeing from the precipitation? Some things you can include are:

- Snow cover (or lack of snow cover!)
- Is the ground frozen? That's important to know since it enhances runoff from heavy rain
- Is there ice on nearby streams, rivers, ponds, or lakes?
- Anything else you feel is important for others to know about

How often should you report? As we like to say "One report A Week Is All We Seek!" Try to submit a CMR once a week, preferably over the weekend or on Mondays so the data can be used by the authors of the U.S. Drought Monitor as they bring their weekly analysis.

How do you submit a CMR? It's easy!



Once you log in, go to "My Data" at the top of the CoCoRaHS web page.

Click on “Condition Monitoring Report” under the “Enter My New Reports” menu on the left.

### My Data Entry : Condition Monitoring Report Form

**Condition Monitoring Report Form** Submit Data Reset

Station Number : MA-NF-1

Station Name : Norwood 1.3 NW

Condition monitoring reports are submitted on a regular (weekly, biweekly, monthly) basis to share information about the effects of local precipitation on the environment and society. By submitting reports on a regular basis, you create a baseline to see change through time, such as seasonal differences or changes caused by more or less precipitation. Please refer to the [Condition Monitoring training slide show](#) for more information.  
*\* indicates required field*

Report Date \*  
11/9/2020

**Condition Scale Bar** [More information on the scale bar](#) Clear Scale Bar

|                       |                       |                       |                       |                       |                       |                       |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Severely Dry          | Moderately Dry        | Mildly Dry            | Near Normal           | Mildly Wet            | Moderately Wet        | Severely Wet          |
| <input type="radio"/> |

**Description**  
Please provide a description of how dry, normal or wet conditions are affecting you, your livelihood, your activities, etc. \*

**Report Categories**  
Please check at least one report category. If you check a category, please provide supporting information in the description. [More information on condition monitoring categories.](#)

- General Awareness
- Agriculture
- Business & Industry
- Energy
- Fire
- Plants & Wildlife
- Relief, Response & Restrictions
- Society & Public Health
- Tourism & Recreation
- Water Supply & Quality

Submit Data Reset



Fill out the report form shown above. If you need help, click on the links in the form.

If you would like more comprehensive training information, go to the [CoCoRaHS web page](#). There is also [regional guidance for the Northeast](#). If you still have questions or need help, contact Joe

([Joseph.Dellicarpini@noaa.gov](mailto:Joseph.Dellicarpini@noaa.gov)) or Matt ([matt.spies@att.net](mailto:matt.spies@att.net)).

## **News Items**

**Water Year Summaries:** In Nolan's last newsletter, he spouted off a bunch of trivia about the network's Water Year Summary. It does make you wonder where Nolan got all of that from, doesn't it. 😊

Time for trivia about our own [Water Year Summaries](#)

563 stations submitted at least 1 report in the 2020 Water Year, spanning from Oct 2019 to Sep 2020.

116 stations (21%) covered 366 days. 229 stations (41%) covered more than 360 days. 290 stations (52%) covered more than 290 days. 136 stations (24%) are new to the crew. All of these %'s are higher than the network average and are more impressive with the strong number of new stations. 15% of the stations being new is a good break-even point and ours at 24% is much higher.

With more than 360 days covered, our highest precip total was CT-NL-29 East Lyme 0.5 SW with 55.71" 25 stations with less than 40" total. That's dry. 180 days of precip with MA-BA-22 Yarmouth 0.9 NNW. 71.2" snowfall from MA-WR-22 Fitchburg 2.0 NNE. MA-HS-7 Plainfield 2.2 SW with 54.39" of precip, 144 days of precip, 70.8" of snowfall, 42 days of snowfall and 107 days of snow on the ground, and total SWE reports, too!

**Single Month Records:** Like a broken record, we keep breaking our area's single month records. Congratulations to all!!

- ✓ Daily Reports per day: 411
- ✓ Single day record of 448 reports on October 17<sup>th</sup>
- ✓ Daily Reports in Connecticut, Massachusetts and Rhode Island
- ✓ 2,443 Comments. That's a record we can keep breaking.

And leading the entire network with:

- ✓ The highest % of snow depth reports. 29% of last October's Daily Reports had a snow depth report. 33% of this October's Daily Reports had a snow depth report. Thank you for committing to Snow Depth Reports in October.

## **Observer Tips**

**Focus on the Gauge Catch:** Our first snow happened in late October. Mistakes tend to happen with reporting, so please be careful with all of your reported values.

As you keep a running total of precipitation, and you want to make our long list of stations each month, remember this: **Focus on the Gauge Catch.** Find the liquid contents of what fell in your gauge and report that value, and **report that value as the 1<sup>st</sup> reported value**, as you do with your rainfall measurements throughout the year.

Two ways to find the liquid contents of your gauge.

- **Way #1)** Add in a measured quantity of hot tap water. Let the snow melt completely. Pour out and measure the contents of the water. SUBTRACT the measured quantity of hot tap water. The remaining amount is what you report in the 1<sup>st</sup> value on the reporting form.

For new snowfall less than 5", about 0.50" of hot tap water works well, and usually keeps the contents under 1.00"

For snow greater than 5", start with 1.00" of hot tap water. Continue to add additional measures of 1.00" until the snow completely melts. Pour. SUBTRACT. Report the remaining amount.

- **Way #2)** A weigh scale. You MUST know the tare weight of your outer cylinder (around 460g-480g), a label with its precise weight on its side or bottom helps. You MUST know the equivalent measure of water. In our 4" diameter gauges, that equivalent is 201g = 1" Got a scale that measures in pounds and ounces? Go for it. Be precise. Subtract the tare weight of the outer cylinder. Do the division of 201g:1". Report the liquid contents of your gauge.

Throughout the winter, keep the **Focus on the Gauge Catch.**

**Timing!** The earlier you report, the more people see and make use of your report. Seems obvious, but true. The Forecast Office gets a feed of your reports around 9AM. Many of us are poking around the maps and tables of reports in the morning as well and reading your Comments. Your snow reports end up the National Snow Database. Your reports are used and are valued.

Comparing the obs date and entry dates from October's reports: 59% of our Daily Reports were submitted on the same day and before 9AM, and 83% of our Daily Reports were submitted on the same day. Although, these are slightly better than the network average, when you skip a day from reporting, another problem comes up and that is with this next topic...

**MultiDay Reports!** The Zeros of September are gone and the precip has returned. When you skip a day or more from reporting, be careful, detailed, and accurate with the use of Multi-Day Reports. Get the start date and end date correct, and as always, pay attention to your reported amount. These details spell the difference between keeping your record complete and not keeping your record complete.

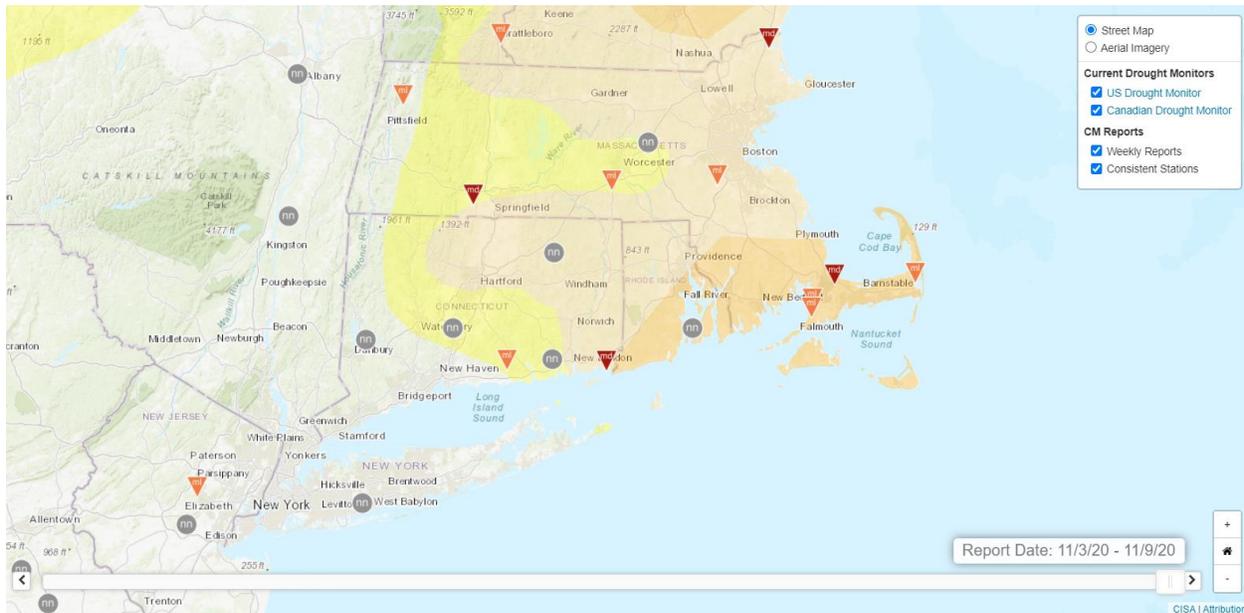
**Significant Weather Reports:** Real time reporting that can alert your local NWS Forecast Office within a minute. If there is something urgent you want to share about the weather, here are our reporting criteria

- **1" or more of rain or snow in 1 hour or less.**
- **2" or more of rain.**
- **Flooding.**
- **3" of new snow. Change of precip type. Snow total**
- **Anything you feel is significant... or urgent!**

**mPING app for Apple and Android:** For whatever meteorological phenomena comes our way, use mPING someday. Fog is under "Reduced Visibility. Rain. All of the different winter precip types. Give it a try.

**Condition Monitoring Reports:** Droughts do not take the winter off!  
Keep watch over conditions where you are!

One report a week is all that we seek. Develop a reputation of being a  
Consistent Station by submitting over 20 reports in a 52-week timeframe.



**nn Jamestown 0.3 SSE**  
Sat Nov 07 2020

Lawn is still green but not growing much. Garden is done for the season. There are still a lot of green leaves, mainly Norway Maples. Seasonal stream is flowing slowly.

RI-NW-18 -- General Awareness, Plants And Wildlife

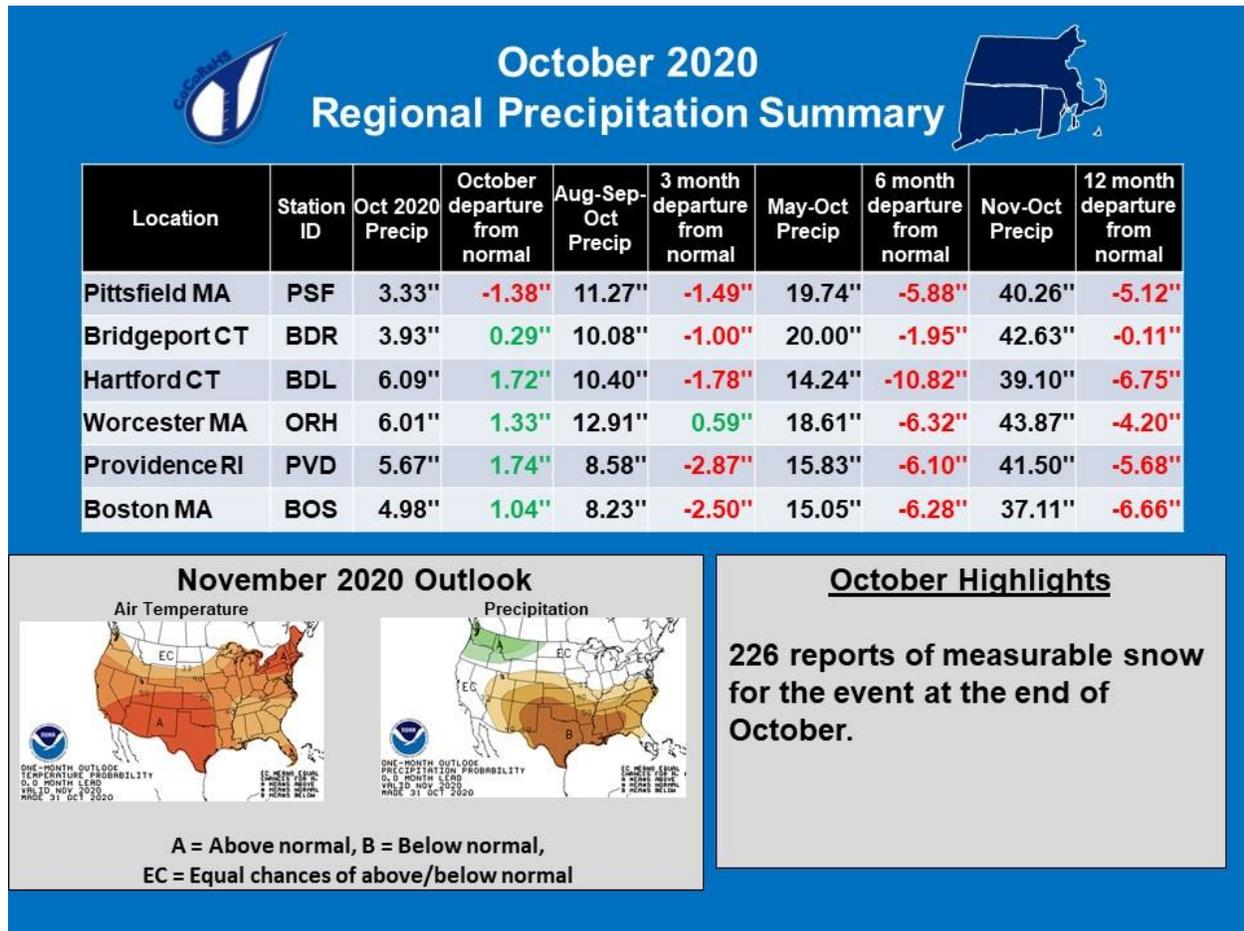
**nd Newburyport 0.4 NNW**  
Sat Nov 07 2020

.52 inches of rain in the last week. Streams, ponds and reservoir are still low or dry. Plants are becoming dormant so hard to tell if they are effected.

MA-ES-64 -- General Awareness, Water Supply And Quality

# Detail and Summary for October 2020

From the National Weather Service (NWS) Climate sites for Oct 2020.

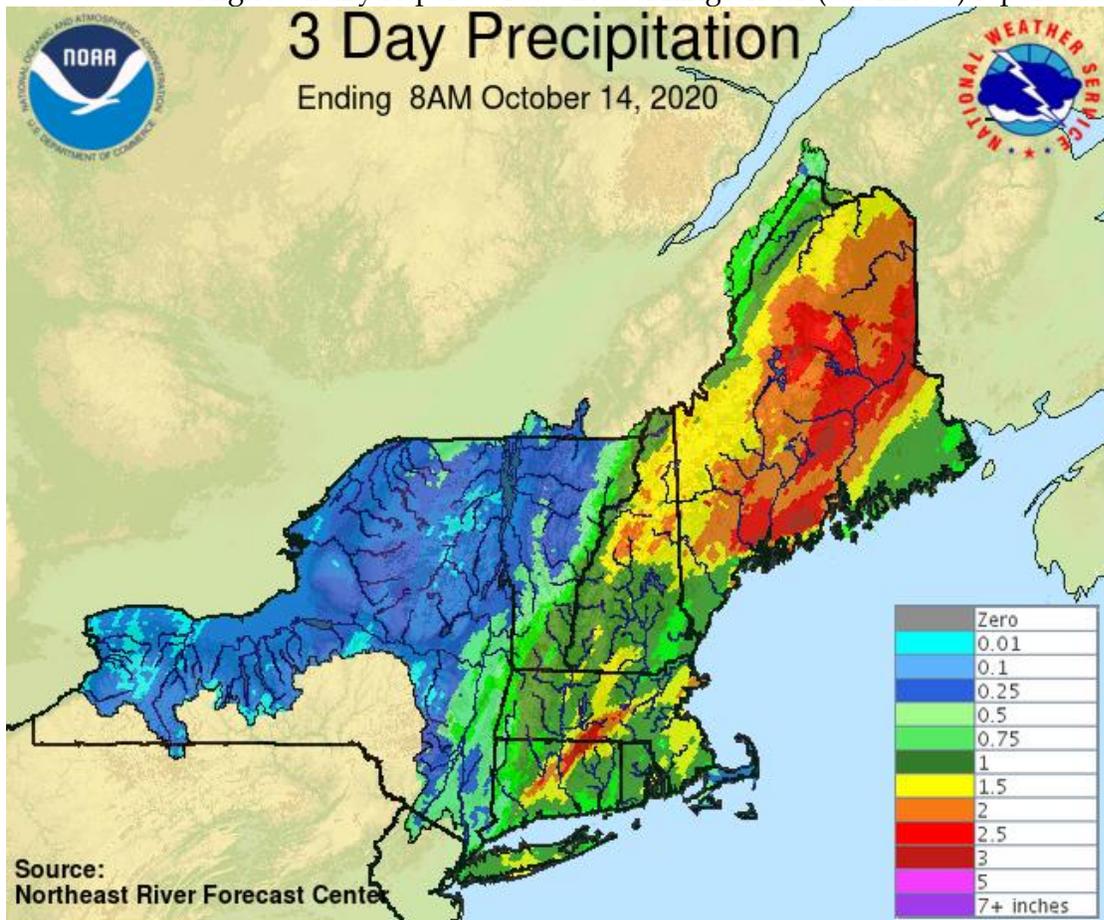


Several and numerous light rain events for the month, kept us from stringing too many zeros together. Two strong precip events for October. The Main Event on the 13<sup>th</sup>-14<sup>th</sup> with the map on the following page, strong 2"+ totals on a line extending from Waterbury CT to Gloucester MA.. Rain and measurable snow for the 30<sup>th</sup> and 31<sup>st</sup> with a widespread 1" precip amounts for many, and some 2"+ precip totals for Fairfield, Plymouth and the Cape and Islands. Thank you for the Significant Weather Reports during this event.

Do take in the next section with appreciation for your efforts.

## From your reports for October 2020

|                                |  |
|--------------------------------|--|
| Observers reporting            | <b>482</b>   |
| Reported all 31 days           | 281  |
| Completed by Multi-Day Reports | 41   |
| Missing 1 or 2 reports         | 54   |
| Daily Reports                  | <b>12,732</b>  |
| Zero Reports                   | 5,859  |
| Non-Zero Reports               | 6,873  |
| Daily Comments                 | <b>2,443</b>   |
| Multi-Day Reports              | 169  |
| Condition Monitoring Reports   | 117  |
| Significant Weather Reports    | 40   |
| Hail Reports                   | 3  |
| Snowfall Reports               | 6,672  |
| Snow Depth Reports             | 4,210  |
| Total SWE Reports              | 2,875  |
| Highest Daily Report           | 4.85" in Southington CT (CT-HR-55) reported on 10/14 |



Rains at the book-ends of October, along with snow for the 31<sup>st</sup>, kept this list from breaking more records. Several MultiDay Reports overlapped the beginning or the end of October. Several more reported NA for the snow on the 31<sup>st</sup>.

Keep the focus on the Gauge Catch, during these winter months.

Over 300 stations, yet again, on this list. Take in the amounts.

| Watershed  | Watershed Name                 | Station Number | Station Name         | Precip |
|------------|--------------------------------|----------------|----------------------|--------|
| 01070004   | Nashua                         |                |                      |        |
| 0107000401 | North Nashua River             | MA-WR-44       | Westminster 0.6 WSW  | 5.49"  |
| 0107000401 | North Nashua River             | MA-WR-8        | Fitchburg 1.6 SSW    | 3.57"  |
| 0107000402 | Headwaters Nashua River        | MA-WR-56       | Sterling 4.3 NW      | 5.51"  |
| 0107000402 | Headwaters Nashua River        | MA-MD-25       | Ayer 0.1 SW          | 3.68"  |
| 0107000403 | Squannacook River              | MA-MD-47       | West Townsend 0.5 W  | 4.91"  |
| 01070005   | Concord                        |                |                      |        |
| 0107000501 | Sudbury River                  | MA-MD-156      | Marlborough 2.8 ENE  | 5.20"  |
| 0107000501 | Sudbury River                  | MA-MD-89       | Sudbury 3.6 W        | 5.46"  |
| 0107000501 | Sudbury River                  | MA-MD-173      | Sudbury 2.7 WNW      | 5.23"  |
| 0107000501 | Sudbury River                  | MA-MD-107      | Framingham 1.7 E     | 4.53"  |
| 0107000502 | Concord River                  | MA-WR-30       | Shrewsbury 1.6 NNE   | 6.81"  |
| 0107000502 | Concord River                  | MA-WR-28       | Berlin 1.3 WSW       | 5.92"  |
| 0107000502 | Concord River                  | MA-WR-18       | Northborough 0.6 SSE | 4.16"  |
| 0107000502 | Concord River                  | MA-WR-42       | Northborough 2.3 N   | 6.43"  |
| 0107000502 | Concord River                  | MA-MD-115      | Hudson 1.4 NW        | 6.28"  |
| 0107000502 | Concord River                  | MA-WR-55       | Harvard 2.1 S        | 5.50"  |
| 0107000502 | Concord River                  | MA-MD-12       | Acton 1.3 SW         | 5.76"  |
| 0107000502 | Concord River                  | MA-MD-51       | Maynard 0.7 ESE      | 5.80"  |
| 0107000502 | Concord River                  | MA-MD-53       | Acton 4.0 ENE        | 6.13"  |
| 0107000502 | Concord River                  | MA-MD-62       | Chelmsford 1.2 E     | 4.85"  |
| 01070006   | Merrimack River                |                |                      |        |
| 0107000612 | Stony Brook - Merrimack River  | MA-MD-104      | Littleton 2.8 NNW    | 5.04"  |
| 0107000612 | Stony Brook - Merrimack River  | MA-MD-105      | Littleton 0.9 WSW    | 5.42"  |
| 0107000612 | Stony Brook - Merrimack River  | MA-ES-10       | Andover 1.5 W        | 4.58"  |
| 0107000613 | Shawsheen River                | MA-MD-52       | Lexington 0.6 SW     | 3.82"  |
| 0107000613 | Shawsheen River                | MA-ES-48       | Andover 0.6 E        | 5.75"  |
| 0107000614 | Powwow River - Merrimack River | MA-ES-66       | North Andover 0.3 NW | 3.82"  |
| 0107000614 | Powwow River - Merrimack River | MA-ES-20       | Haverhill 0.7 N      | 4.46"  |
| 0107000614 | Powwow River - Merrimack River | MA-ES-4        | Groveland 0.5 WSW    | 5.05"  |

|            |                                     |           |                          |       |
|------------|-------------------------------------|-----------|--------------------------|-------|
| 0107000614 | Powwow River - Merrimack River      | MA-ES-61  | Amesbury 2.6 WSW         | 4.91" |
| 0107000614 | Powwow River - Merrimack River      | MA-ES-59  | Amesbury 1.2 N           | 5.20" |
| 0107000614 | Powwow River - Merrimack River      | MA-ES-64  | Newburyport 0.4 NNW      | 4.61" |
| 0107000614 | Powwow River - Merrimack River      | MA-ES-70  | Newburyport 0.6 N        | 5.63" |
| 0107000614 | Powwow River - Merrimack River      | MA-ES-56  | Newburyport 1.0 ESE      | 5.58" |
| 01080201   | Middle Connecticut                  |           |                          |       |
| 0108020105 | Green River                         | MA-FR-35  | Bernardston 1.0 SW       | 5.05" |
| 0108020106 | Manhan River - Connecticut River    | MA-HS-8   | Williamsburg 1.2 WSW     | 5.26" |
| 0108020106 | Manhan River - Connecticut River    | MA-HS-26  | Easthampton 0.5 SW       | 5.60" |
| 0108020106 | Manhan River - Connecticut River    | MA-FR-12  | Sunderland 1.3 SE        | 5.47" |
| 0108020107 | Batchelor Brook - Connecticut River | MA-HD-13  | Springfield 4.1 W        | 5.93" |
| 0108020107 | Batchelor Brook - Connecticut River | MA-HS-39  | Belchertown 1.8 SW       | 7.12" |
| 01080202   | Miller                              |           |                          |       |
| 0108020201 | Upper Millers River                 | NH-CH-20  | Rindge 3.2 ESE           | 5.31" |
| 0108020202 | Lower Millers River                 | MA-WR-80  | Winchendon 3.2 S         | 5.70" |
| 0108020202 | Lower Millers River                 | MA-WR-40  | Gardner 1.4 SSW          | 5.14" |
| 01080203   | Deerfield                           |           |                          |       |
| 0108020303 | North River                         | MA-FR-31  | Colrain 3.7 WNW          | 5.66" |
| 0108020305 | Lower Deerfield River               | MA-FR-17  | Buckland 1.8 ESE         | 5.07" |
| 0108020305 | Lower Deerfield River               | MA-FR-13  | Conway 2.9 NW            | 5.68" |
| 0108020305 | Lower Deerfield River               | MA-FR-25  | Conway 2.7 NW            | 4.65" |
| 0108020305 | Lower Deerfield River               | MA-FR-10  | Conway 0.9 SW            | 5.12" |
| 01080204   | Chicopee                            |           |                          |       |
| 0108020401 | Swift River                         | MA-FR-8   | New Salem 3.1 S          | 5.12" |
| 0108020402 | Ware River                          | MA-WR-54  | Barre 1.4 NNE            | 5.35" |
| 0108020403 | Quaboag River                       | MA-HD-26  | Brimfield 3.6 NW         | 6.72" |
| 0108020403 | Quaboag River                       | MA-WR-75  | Warren 2.4 WSW           | 5.45" |
| 0108020404 | Chicopee River                      | MA-HD-25  | Ludlow 2.3 SW            | 6.79" |
| 01080205   | Lower Connecticut                   |           |                          |       |
| 0108020501 | Mill River - Connecticut River      | CT-HR-82  | Suffield 0.5 NNE         | 6.28" |
| 0108020501 | Mill River - Connecticut River      | CT-HR-99  | Suffield 3.6 ENE         | 6.37" |
| 0108020501 | Mill River - Connecticut River      | CT-HR-57  | Suffield Depot 3.3 NNE   | 6.43" |
| 0108020501 | Mill River - Connecticut River      | MA-HD-33  | Agawam 1.1 SSW           | 5.74" |
| 0108020501 | Mill River - Connecticut River      | CT-HR-5   | Enfield 1.5 SE           | 7.06" |
| 0108020501 | Mill River - Connecticut River      | MA-HD-30  | Hampden 2.0 NW           | 6.87" |
| 0108020502 | Scantic River                       | CT-TL-35  | Somersville 0.2 ENE      | 6.49" |
| 0108020502 | Scantic River                       | CT-TL-41  | Somers 0.3 S             | 7.49" |
| 0108020502 | Scantic River                       | CT-TL-15  | Central Somers 0.3 N     | 7.35" |
| 0108020503 | Park River                          | CT-HR-49  | West Hartford 1.1 W      | 6.29" |
| 0108020504 | Hockanum River                      | CT-HR-52  | Central Manchester 0.8 N | 7.17" |
| 0108020504 | Hockanum River                      | CT-HR-100 | Manchester 0.4 ENE       | 7.26" |

|            |  |           |                            |       |
|------------|--|-----------|----------------------------|-------|
| 0108020504 | Hockanum River                             | CT-TL-19  | Vernon 2.8 N               | 6.85" |
| 0108020505 | Roaring Brook - Connecticut River          | CT-HR-68  | Rocky Hill 1.3 E           | 7.22" |
| 0108020506 | Mattabesset River                          | CT-HR-15  | Southington 3.0 E          | 6.77" |
| 0108020506 | Mattabesset River                          | CT-HR-80  | Kensington 0.7 WSW         | 6.47" |
| 0108020506 | Mattabesset River                          | CT-HR-65  | Newington 1.9 SSW          | 6.12" |
| 0108020506 | Mattabesset River                          | CT-MD-25  | Middlefield 0.6 SE         | 6.58" |
| 0108020507 | Higganum Creek - Connecticut River         | CT-MD-23  | Higganum 0.7 N             | 5.49" |
| 0108020507 | Higganum Creek - Connecticut River         | CT-MD-26  | Higganum 0.8 NE            | 5.08" |
| 0108020509 | Eightmile River - Connecticut River        | CT-NL-44  | Old Lyme 0.5 W             | 4.41" |
| 01080206   | Westfield                                  |           |                            |       |
| 0108020601 | Headwaters Westfield River                 | MA-HS-7   | Plainfield 2.2 SW          | 5.31" |
| 0108020601 | Headwaters Westfield River                 | MA-HS-14  | Plainfield 2.4 ESE         | 5.38" |
| 0108020603 | Outlet Westfield River                     | MA-HD-31  | Westfield 1.6 SSW          | 5.77" |
| 0108020603 | Outlet Westfield River                     | CT-HR-88  | Suffield Depot 6.0 WNW     | 6.54" |
| 0108020603 | Outlet Westfield River                     | MA-HD-28  | Westfield 2.8 SE           | 6.57" |
| 0108020603 | Outlet Westfield River                     | MA-HD-29  | West Springfield 1.6 SSW   | 6.23" |
| 01080207   | Farmington                                 |           |                            |       |
| 0108020701 | Still River                                | CT-LT-44  | Winsted 1.0 WSW            | 5.47" |
| 0108020701 | Still River                                | CT-LT-15  | Colebrook 1.0 NE           | 5.15" |
| 0108020702 | West Branch Farmington River               | CT-LT-18  | New Hartford Center 1.5 N  | 5.68" |
| 0108020704 | Headwaters Farmington River                | CT-LT-9   | New Hartford Center 3.2 SW | 5.62" |
| 0108020704 | Headwaters Farmington River                | CT-HR-71  | Bristol 2.7 NNE            | 5.55" |
| 0108020704 | Headwaters Farmington River                | CT-HR-28  | North Canton 0.8 SSW       | 5.51" |
| 0108020705 | Salmon Brook                               | CT-HR-8   | North Granby 1.3 ENE       | 6.30" |
| 01090001   | Charles                                    |           |                            |       |
| 0109000101 | Plum Island Sound - Frontal Atlantic Ocean | MA-ES-19  | West Newbury 1.8 SSE       | 5.33" |
| 0109000101 | Plum Island Sound - Frontal Atlantic Ocean | MA-ES-46  | Georgetown 1.3 ENE         | 5.85" |
| 0109000101 | Plum Island Sound - Frontal Atlantic Ocean | MA-ES-24  | Newburyport 0.8 SW         | 5.57" |
| 0109000102 | Ipswich River                              | MA-MD-85  | Wilmington 2.2 WNW         | 5.63" |
| 0109000102 | Ipswich River                              | MA-MD-125 | Tewksbury 3.6 SSE          | 5.59" |
| 0109000102 | Ipswich River                              | MA-ES-58  | Middleton 1.4 SSW          | 5.96" |
| 0109000102 | Ipswich River                              | MA-ES-12  | Boxford 2.4 S              | 5.01" |
| 0109000102 | Ipswich River                              | MA-ES-71  | Danvers 2.5 NNE            | 5.48" |
| 0109000103 | Essex River - Frontal Atlantic Ocean       | MA-ES-41  | Danvers 0.8 ESE            | 6.83" |
| 0109000103 | Essex River - Frontal Atlantic Ocean       | MA-ES-54  | Gloucester 2.1 NW          | 6.45" |
| 0109000103 | Essex River - Frontal Atlantic Ocean       | MA-ES-22  | Rockport 1.0 E             | 6.55" |
| 0109000104 | Saugus River - Frontal Broad Sound         | MA-MD-81  | Wakefield 0.5 NNW          | 5.27" |
| 0109000104 | Saugus River - Frontal Broad Sound         | MA-MD-126 | Melrose 0.5 NE             | 5.35" |
| 0109000104 | Saugus River - Frontal Broad Sound         | MA-ES-45  | Nahant 0.4 N               | 5.85" |
| 0109000104 | Saugus River - Frontal Broad Sound         | MA-ES-8   | Marblehead 0.8 SW          | 6.37" |
| 0109000105 | Mystic River - Frontal Boston Harbor       | MA-MD-123 | Lexington 1.3 SE           | 5.40" |

|            |   |           |                       |       |
|------------|---|-----------|-----------------------|-------|
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-MD-174 | Woburn 1.9 WSW        | 5.14" |
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-MD-175 | Arlington 0.4 WNW     | 5.19" |
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-MD-7   | Winchester 0.7 SE     | 5.31" |
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-MD-44  | Medford 1.2 W         | 4.78" |
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-MD-11  | Cambridge 0.9 NNW     | 5.47" |
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-MD-170 | Somerville 0.5 W      | 4.71" |
| 0109000105 | Mystic River - Frontal Boston Harbor        | MA-SF-10  | Chelsea 0.8 N         | 6.38" |
| 0109000106 | Upper Charles River                         | MA-WR-1   | Milford 2.3 NNW       | 5.29" |
| 0109000106 | Upper Charles River                         | MA-MD-106 | Holliston 2.4 W       | 5.03" |
| 0109000106 | Upper Charles River                         | MA-MD-55  | Holliston 0.7 W       | 5.31" |
| 0109000106 | Upper Charles River                         | MA-MD-42  | Holliston 0.8 S       | 5.41" |
| 0109000106 | Upper Charles River                         | MA-NF-62  | Franklin 1.4 SW       | 5.36" |
| 0109000106 | Upper Charles River                         | MA-MD-158 | Sherborn 1.1 NW       | 5.57" |
| 0109000106 | Upper Charles River                         | MA-NF-50  | Millis 1.4 ENE        | 4.68" |
| 0109000107 | Lower Charles River - Frontal Boston Harbor | MA-MD-120 | Natick 1.9 NNE        | 5.57" |
| 0109000107 | Lower Charles River - Frontal Boston Harbor | MA-MD-80  | Lincoln 1.5 SW        | 5.28" |
| 0109000107 | Lower Charles River - Frontal Boston Harbor | MA-MD-119 | Watertown 1.1 W       | 5.45" |
| 0109000107 | Lower Charles River - Frontal Boston Harbor | MA-MD-134 | Somerville 0.5 SSE    | 5.61" |
| 0109000108 | Neponset River - Frontal Boston Harbor      | MA-NF-1   | Norwood 1.3 NW        | 5.60" |
| 0109000108 | Neponset River - Frontal Boston Harbor      | MA-NF-54  | Quincy 1.2 W          | 6.55" |
| 0109000109 | Whitmans Pond - Frontal Boston Harbor       | MA-NF-32  | Quincy 1.8 WSW        | 5.58" |
| 0109000109 | Whitmans Pond - Frontal Boston Harbor       | MA-PL-36  | Hingham 0.8 ESE       | 6.43" |
| 01090002   | Cape Cod                                    |           |                       |       |
| 0109000201 | North River - Frontal Massachusetts Bay     | MA-PL-57  | Hanson 1.8 N          | 6.48" |
| 0109000201 | North River - Frontal Massachusetts Bay     | MA-PL-5   | Kingston 3.3 WNW      | 7.04" |
| 0109000202 | Cape Cod                                    | MA-BA-2   | Falmouth 3.1 NNW      | 5.33" |
| 0109000202 | Cape Cod                                    | MA-BA-57  | Falmouth 5.7 N        | 5.00" |
| 0109000202 | Cape Cod                                    | MA-BA-13  | Falmouth 0.6 NNW      | 5.09" |
| 0109000202 | Cape Cod                                    | MA-BA-50  | Falmouth 5.4 NNE      | 4.40" |
| 0109000202 | Cape Cod                                    | MA-BA-17  | East Falmouth 1.2 WNW | 3.82" |
| 0109000202 | Cape Cod                                    | MA-BA-3   | Falmouth 3.0 E        | 4.53" |
| 0109000202 | Cape Cod                                    | MA-BA-11  | East Falmouth 1.4 ESE | 5.04" |
| 0109000202 | Cape Cod                                    | MA-BA-83  | Mashpee 2.5 W         | 5.82" |
| 0109000202 | Cape Cod                                    | MA-BA-18  | Waquoit 0.6 SSW       | 5.03" |
| 0109000202 | Cape Cod                                    | MA-BA-47  | Mashpee 2.4 WSW       | 5.29" |
| 0109000202 | Cape Cod                                    | MA-BA-45  | Sandwich 0.9 NNE      | 4.33" |
| 0109000202 | Cape Cod                                    | MA-BA-79  | Mashpee 0.8 SSW       | 5.16" |
| 0109000202 | Cape Cod                                    | MA-BA-78  | Mashpee 4.6 S         | 4.98" |
| 0109000202 | Cape Cod                                    | MA-BA-10  | East Sandwich 2.3 SE  | 5.63" |
| 0109000202 | Cape Cod                                    | MA-BA-59  | Barnstable 3.6 W      | 5.32" |
| 0109000202 | Cape Cod                                    | MA-BA-60  | Hyannis 0.7 WNW       | 4.75" |

|            |   |          |                          |       |
|------------|---|----------|--------------------------|-------|
| 0109000202 | Cape Cod                                    | MA-BA-76 | Barnstable 0.7 NE        | 4.50" |
| 0109000202 | Cape Cod                                    | MA-BA-22 | Yarmouth 0.9 NNW         | 4.56" |
| 0109000202 | Cape Cod                                    | MA-BA-72 | Yarmouth 2.0 S           | 4.57" |
| 0109000202 | Cape Cod                                    | MA-BA-77 | South Dennis 1.0 NW      | 4.65" |
| 0109000202 | Cape Cod                                    | MA-BA-52 | Truro 0.8 E              | 4.57" |
| 0109000202 | Cape Cod                                    | MA-BA-36 | Harwich 2.6 ENE          | 4.66" |
| 0109000202 | Cape Cod                                    | MA-BA-68 | Eastham 1.9 WSW          | 4.18" |
| 0109000202 | Cape Cod                                    | MA-BA-42 | Orleans 1.8 S            | 4.30" |
| 0109000202 | Cape Cod                                    | MA-BA-51 | Orleans 3.0 S            | 4.05" |
| 0109000202 | Cape Cod                                    | MA-BA-12 | Orleans 1.1 E            | 4.09" |
| 0109000202 | Cape Cod                                    | MA-BA-7  | Wellfleet 3.0 E          | 3.80" |
| 0109000202 | Cape Cod                                    | MA-BA-30 | Eastham 0.6 SW           | 4.34" |
| 0109000202 | Cape Cod                                    | MA-BA-43 | Chatham 0.4 WSW          | 4.79" |
| 0109000203 | Mattapoisett River - Frontal Buzzards Bay   | MA-PL-52 | Plymouth 10.6 SSE        | 3.99" |
| 0109000204 | Paskamanset River - Frontal Buzzards Bay    | MA-BR-14 | Dartmouth 2.5 SSW        | 6.30" |
| 0109000204 | Paskamanset River - Frontal Buzzards Bay    | MA-BR-52 | New Bedford 4.3 N        | 5.64" |
| 0109000205 | Sakonnet Point - Frontal Rhode Island Sound | RI-NW-5  | Little Compton 1.7 NW    | 6.16" |
| 0109000205 | Sakonnet Point - Frontal Rhode Island Sound | RI-NW-17 | Tiverton 4.4 SSE         | 5.76" |
| 0109000205 | Sakonnet Point - Frontal Rhode Island Sound | RI-NW-7  | Little Compton 0.6 E     | 6.18" |
| 0109000206 | Elizabeth Islands - Marthas Vineyard        | MA-DK-21 | Chilmark 0.9 E           | 4.76" |
| 0109000206 | Elizabeth Islands - Marthas Vineyard        | MA-DK-9  | West Tisbury 0.4 S       | 5.03" |
| 0109000206 | Elizabeth Islands - Marthas Vineyard        | MA-DK-2  | Vineyard Haven 0.8 WSW   | 4.64" |
| 0109000206 | Elizabeth Islands - Marthas Vineyard        | MA-DK-18 | Oak Bluffs 0.1 SW        | 4.05" |
| 0109000206 | Elizabeth Islands - Marthas Vineyard        | MA-DK-22 | Edgartown 1.3 WNW        | 4.51" |
| 01090003   | Blackstone                                  |          |                          |       |
| 0109000301 | Upper Blackstone River                      | MA-WR-41 | Auburn 2.6 SW            | 5.68" |
| 0109000301 | Upper Blackstone River                      | MA-WR-43 | Leicester 2.4 ESE        | 6.82" |
| 0109000301 | Upper Blackstone River                      | MA-WR-81 | Worcester 1.6 SE         | 6.51" |
| 0109000301 | Upper Blackstone River                      | MA-WR-69 | Northbridge 1.7 WNW      | 4.37" |
| 0109000302 | Lower Blackstone River                      | RI-PR-50 | Harrisville 1.2 SSE      | 5.46" |
| 0109000302 | Lower Blackstone River                      | RI-PR-28 | North Smithfield 0.7 SE  | 6.02" |
| 0109000302 | Lower Blackstone River                      | RI-PR-89 | Woonsocket 1.8 WNW       | 5.60" |
| 0109000302 | Lower Blackstone River                      | RI-PR-59 | Cumberland Hill 0.9 NW   | 5.04" |
| 0109000302 | Lower Blackstone River                      | RI-PR-55 | Cumberland Hill 3.6 NNE  | 4.92" |
| 01090004   | Narragansett                                |          |                          |       |
| 0109000401 | Upper Taunton River                         | MA-BR-30 | Taunton 3.9 N            | 5.92" |
| 0109000401 | Upper Taunton River                         | MA-NF-31 | Stoughton 1.2 E          | 5.74" |
| 0109000401 | Upper Taunton River                         | MA-PL-22 | East Bridgewater 0.3 WSW | 6.00" |
| 0109000401 | Upper Taunton River                         | MA-PL-15 | Abington 1.2 NNE         | 5.64" |
| 0109000401 | Upper Taunton River                         | MA-PL-23 | Pembroke 2.8 SW          | 6.15" |
| 0109000402 | Middle Taunton River                        | MA-PL-31 | Bridgewater 1.8 SE       | 6.42" |

|            |  |          |                           |       |
|------------|--|----------|---------------------------|-------|
| 0109000403 | Threemile River                              | MA-NF-19 | Foxborough 1.8 SSW        | 5.37" |
| 0109000403 | Threemile River                              | MA-BR-55 | NWS Boston/Norton 2.5 ESE | 6.02" |
| 0109000404 | Ten Mile River                               | MA-NF-58 | Plainville 0.6 NNW        | 3.87" |
| 0109000404 | Ten Mile River                               | MA-BR-23 | Attleboro 0.9 ENE         | 5.48" |
| 0109000405 | Woonasquatucket River-Moshassuck River       | RI-PR-33 | Greenville 0.7 NNW        | 5.80" |
| 0109000405 | Woonasquatucket River-Moshassuck River       | RI-PR-51 | North Smithfield 0.6 S    | 6.24" |
| 0109000405 | Woonasquatucket River-Moshassuck River       | RI-PR-82 | Providence 1.6 NNW        | 5.60" |
| 0109000405 | Woonasquatucket River-Moshassuck River       | RI-PR-53 | Providence 1.7 N          | 4.40" |
| 0109000406 | Pawtuxet River                               | RI-KN-21 | Coventry 1.9 NE           | 6.49" |
| 0109000406 | Pawtuxet River                               | RI-PR-71 | Cranston 1.3 N            | 5.50" |
| 0109000406 | Pawtuxet River                               | RI-PR-57 | Cranston 1.2 SSE          | 6.51" |
| 0109000406 | Pawtuxet River                               | RI-PR-44 | Cranston 4.2 ENE          | 6.12" |
| 0109000407 | Palmer River                                 | RI-BR-11 | Bristol 2.0 NNW           | 5.85" |
| 0109000407 | Palmer River                                 | MA-BR-2  | Rehoboth 2.1 N            | 6.05" |
| 0109000408 | Lower Taunton River - Frontal Mount Hope Bay | MA-BR-61 | Mansfield 2.4 ENE         | 5.61" |
| 0109000408 | Lower Taunton River - Frontal Mount Hope Bay | MA-BR-3  | Norton 1.8 NNE            | 5.94" |
| 0109000408 | Lower Taunton River - Frontal Mount Hope Bay | MA-BR-16 | Somerset 0.4 SSE          | 6.17" |
| 0109000408 | Lower Taunton River - Frontal Mount Hope Bay | MA-BR-64 | Somerset 0.8 NE           | 6.02" |
| 0109000408 | Lower Taunton River - Frontal Mount Hope Bay | MA-BR-58 | Dighton 3.3 NNW           | 6.13" |
| 0109000408 | Lower Taunton River - Frontal Mount Hope Bay | MA-BR-8  | Dighton 1.1 WSW           | 6.35" |
| 0109000409 | Narragansett Bay                             | RI-KN-17 | East Greenwich 1.2 NNE    | 7.10" |
| 0109000409 | Narragansett Bay                             | RI-WS-54 | North Kingstown 2.7 WSW   | 7.43" |
| 0109000409 | Narragansett Bay                             | RI-WS-31 | Kingston 7.5 NNE          | 6.98" |
| 0109000409 | Narragansett Bay                             | RI-WS-44 | North Kingstown 1.5 SSW   | 6.76" |
| 0109000409 | Narragansett Bay                             | RI-KN-15 | Warwick 4.3 SSW           | 5.74" |
| 0109000409 | Narragansett Bay                             | RI-WS-66 | Narragansett 2.9 N        | 7.02" |
| 0109000409 | Narragansett Bay                             | RI-KN-2  | East Greenwich 2.3 ESE    | 6.77" |
| 0109000409 | Narragansett Bay                             | RI-KN-23 | Warwick 3.2 NNE           | 5.95" |
| 0109000409 | Narragansett Bay                             | RI-KN-31 | Warwick 0.8 ENE           | 5.99" |
| 0109000409 | Narragansett Bay                             | RI-PR-67 | Providence 1.6 NE         | 5.16" |
| 0109000409 | Narragansett Bay                             | RI-PR-84 | Providence 2.7 NNE        | 5.22" |
| 0109000409 | Narragansett Bay                             | RI-NW-18 | Jamestown 0.3 SSE         | 5.83" |
| 0109000409 | Narragansett Bay                             | RI-PR-77 | Riverside 0.8 SE          | 5.22" |
| 0109000409 | Narragansett Bay                             | RI-BR-5  | Barrington 1.3 WNW        | 5.66" |
| 0109000409 | Narragansett Bay                             | RI-NW-27 | Newport 1.3 SW            | 4.95" |
| 0109000409 | Narragansett Bay                             | RI-NW-4  | Middletown 1.1 SW         | 4.10" |
| 0109000409 | Narragansett Bay                             | RI-NW-16 | Portsmouth 1.3 S          | 5.73" |
| 0109000409 | Narragansett Bay                             | MA-BR-63 | Swansea 2.1 W             | 5.96" |
| 0109000409 | Narragansett Bay                             | RI-NW-28 | Portsmouth 3.7 NNE        | 5.36" |
| 0109000409 | Narragansett Bay                             | RI-NW-11 | Tiverton 0.8 SSW          | 6.45" |
| 0109000409 | Narragansett Bay                             | RI-NW-20 | Tiverton 1.0 SSW          | 6.31" |

|            |   |          |                           |       |
|------------|---|----------|---------------------------|-------|
| 0109000409 | Narragansett Bay                            | RI-NW-23 | Tiverton 3.6 S            | 5.59" |
| 01090005   | Pawcatuck-Wood                              |          |                           |       |
| 0109000501 | Wood River                                  | RI-WS-1  | Hope Valley 3.7 S         | 6.15" |
| 0109000501 | Wood River                                  | RI-WS-64 | Hope Valley 1.8 NE        | 6.20" |
| 0109000502 | Upper Pawcatuck River                       | RI-WS-51 | Richmond 2.4 SSE          | 5.88" |
| 0109000502 | Upper Pawcatuck River                       | RI-WS-42 | Richmond 4.6 NNE          | 6.18" |
| 0109000502 | Upper Pawcatuck River                       | RI-WS-37 | Kingston 2.4 SW           | 5.92" |
| 0109000503 | Lower Pawcatuck River                       | CT-NL-40 | Pawcatuck 1.8 SSE         | 5.92" |
| 0109000503 | Lower Pawcatuck River                       | RI-WS-30 | Westerly 2.4 NNW          | 5.49" |
| 0109000503 | Lower Pawcatuck River                       | RI-WS-47 | Westerly 0.8 WNW          | 5.92" |
| 0109000504 | Frontal Block Island Sound                  | RI-WS-36 | Charlestown 3.0 WSW       | 6.19" |
| 0109000504 | Frontal Block Island Sound                  | RI-WS-53 | Charlestown 0.7 SE        | 5.61" |
| 0109000504 | Frontal Block Island Sound                  | RI-WS-26 | Charlestown 1.1 ENE       | 6.44" |
| 0109000504 | Frontal Block Island Sound                  | RI-WS-55 | Wakefield 0.8 ENE         | 6.71" |
| 01100001   | Quinebaug                                   |          |                           |       |
| 0110000102 | French River                                | MA-WR-88 | Leicester 2.5 WSW         | 5.74" |
| 0110000102 | French River                                | MA-WR-68 | Oxford 0.9 SSW            | 5.67" |
| 0110000103 | Fivemile River                              | CT-WN-4  | East Killingly 1.3 SW     | 4.96" |
| 0110000105 | Moosup River                                | CT-WN-8  | Moosup 1.7 NE             | 5.93" |
| 0110000105 | Moosup River                                | RI-KN-14 | Greene 1.4 E              | 5.72" |
| 0110000106 | Pachaug River                               | CT-NL-21 | Griswold 0.9 N            | 4.85" |
| 01100002   | Shetucket                                   |          |                           |       |
| 0110000201 | Willimantic River                           | CT-TL-18 | Hebron 5.3 NW             | 5.02" |
| 0110000201 | Willimantic River                           | CT-TL-40 | Coventry 0.3 NNE          | 5.23" |
| 0110000201 | Willimantic River                           | CT-TL-2  | Staffordville 0.4 NNW     | 7.58" |
| 0110000202 | Natchaug River                              | CT-TL-27 | Willington 2.7 SE         | 5.39" |
| 0110000202 | Natchaug River                              | CT-TL-30 | Mansfield Center 2.7 NE   | 4.73" |
| 0110000202 | Natchaug River                              | CT-WN-12 | Eastford 2.0 W            | 5.45" |
| 0110000203 | Shetucket River                             | CT-WN-10 | South Windham 1.3 NNE     | 4.50" |
| 0110000203 | Shetucket River                             | CT-NL-10 | Norwich 2.5 NNE           | 5.20" |
| 01100003   | Thames                                      |          |                           |       |
| 0110000302 | Thames River-Frontal New London Harbor      | CT-NL-5  | Oakdale 2.6 WNW           | 5.56" |
| 0110000302 | Thames River-Frontal New London Harbor      | CT-NL-6  | New London 1.0 NNW        | 5.14" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-38 | Old Lyme 3.4 ESE          | 5.09" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-29 | East Lyme 0.5 SW          | 5.08" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-32 | Niantic 1.1 SW            | 3.91" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-22 | Central Waterford 2.7 SSW | 5.18" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-46 | Mystic 3.4 NW             | 5.59" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-37 | Mystic 1.6 W              | 5.68" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-19 | Mystic 0.9 W              | 4.67" |
| 0110000303 | Mystic River - Frontal Fishers Island Sound | CT-NL-24 | Stonington 1.4 NNW        | 6.07" |

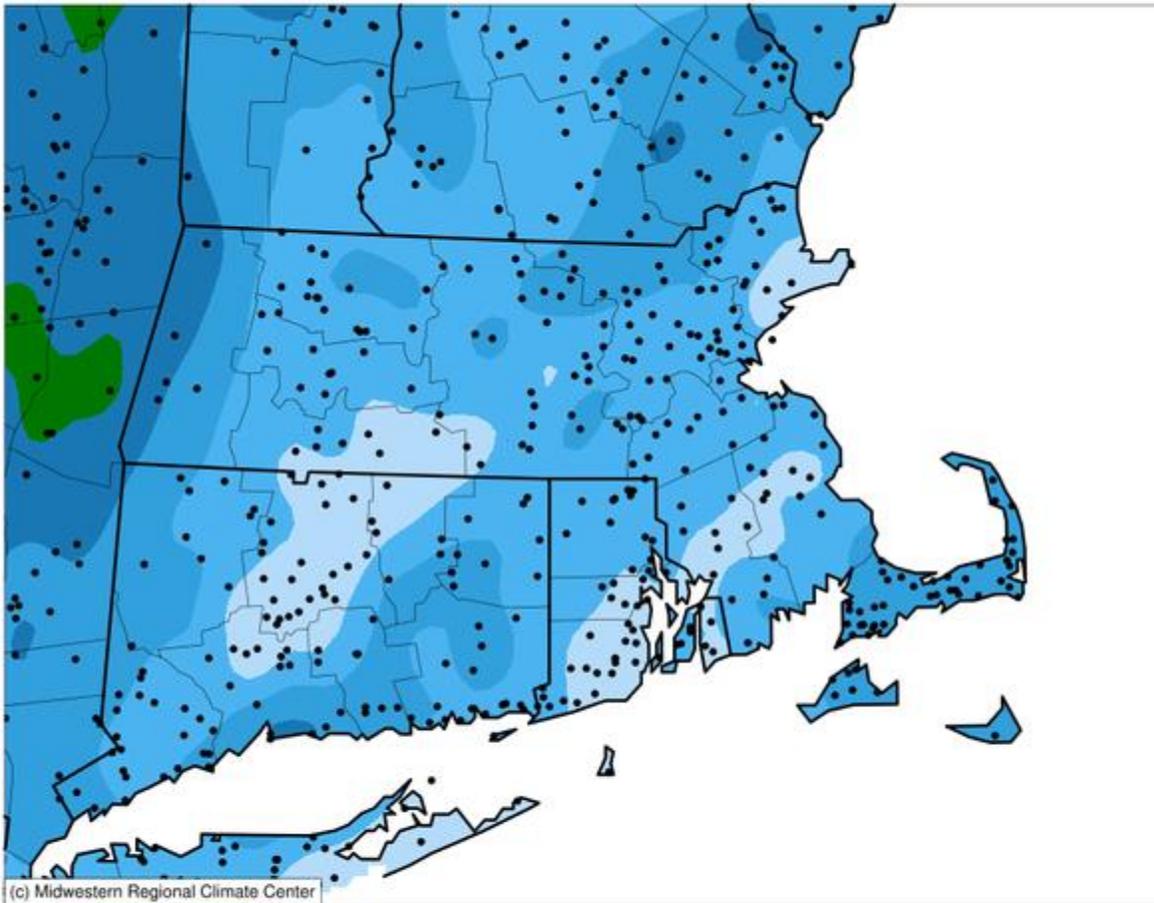
|            |   |          |                            |        |
|------------|---|----------|----------------------------|--------|
| 0110000303 | Mystic River - Frontal Fishers Island Sound   | CT-NL-18 | Stonington 0.5 NNE         | 5.86"  |
| 01100004   | Quinnipiac                                    |          |                            |        |
| 0110000401 | Quinnipiac River                              | CT-NH-14 | Prospect 1.9 ENE           | 8.24"  |
| 0110000401 | Quinnipiac River                              | CT-HR-55 | Southington 1.7 WNW        | 10.76" |
| 0110000401 | Quinnipiac River                              | CT-HR-83 | Plainville 1.7 SW          | 8.48"  |
| 0110000401 | Quinnipiac River                              | CT-HR-23 | Southington 0.9 SSE        | 6.39"  |
| 0110000401 | Quinnipiac River                              | CT-HR-76 | Southington 1.0 ENE        | 5.52"  |
| 0110000401 | Quinnipiac River                              | CT-NH-44 | Wallingford Center 1.9 WNW | 6.25"  |
| 0110000401 | Quinnipiac River                              | CT-NH-43 | Wallingford Center 3.3 NNW | 5.91"  |
| 0110000401 | Quinnipiac River                              | CT-NH-75 | Meriden 2.8 WSW            | 5.61"  |
| 0110000401 | Quinnipiac River                              | CT-NH-42 | Wallingford Center 1.1 N   | 5.08"  |
| 0110000401 | Quinnipiac River                              | CT-NH-72 | Northford 0.8 SW           | 6.62"  |
| 0110000402 | Hammonasset River - Frontal Long Island Sound | CT-NH-21 | East Haven 3.5 SSW         | 3.57"  |
| 0110000402 | Hammonasset River - Frontal Long Island Sound | CT-NH-56 | Guilford Center 2.7 WSW    | 3.37"  |
| 0110000402 | Hammonasset River - Frontal Long Island Sound | CT-NH-50 | Madison Center 4.1 N       | 4.32"  |
| 0110000402 | Hammonasset River - Frontal Long Island Sound | CT-MD-31 | Killingworth 0.7 WNW       | 4.27"  |
| 0110000402 | Hammonasset River - Frontal Long Island Sound | CT-MD-21 | Killingworth 2.6 ESE       | 4.40"  |
| 0110000402 | Hammonasset River - Frontal Long Island Sound | CT-MD-27 | Clinton 3.7 N              | 4.62"  |
| 0110000403 | Mill River - Frontal Long Island Sound        | CT-NH-57 | New Haven 2.9 NNW          | 5.09"  |
| 01100005   | Housatonic                                    |          |                            |        |
| 0110000501 | Headwaters Housatonic River                   | MA-BE-11 | Great Barrington 3.0 N     | 3.78"  |
| 0110000501 | Headwaters Housatonic River                   | MA-BE-3  | Stockbridge .2 NNE         | 3.86"  |
| 0110000501 | Headwaters Housatonic River                   | MA-BE-20 | Lee 3.7 SE                 | 4.60"  |
| 0110000501 | Headwaters Housatonic River                   | MA-BE-22 | Dalton 2.9 SW              | 4.22"  |
| 0110000502 | Williams River - Housatonic River             | MA-BE-23 | Sheffield 1.6 NW           | 4.23"  |
| 0110000503 | Konkapot River-Housatonic River               | CT-LT-28 | Canaan 4.2 ESE             | 4.89"  |
| 0110000504 | Macedonia Brook - Housatonic River            | CT-LT-20 | Warren 2.4 WNW             | 4.57"  |
| 0110000506 | Candlewood Lake-Housatonic River              | CT-LT-37 | New Milford 3.1 WNW        | 4.93"  |
| 0110000506 | Candlewood Lake-Housatonic River              | CT-LT-22 | New Milford 5.3 SSW        | 4.84"  |
| 0110000507 | Shepaug River                                 | CT-LT-29 | Goshen 0.5 NW              | 5.53"  |
| 0110000508 | Still River - Housatonic River                | CT-FR-85 | Danbury 3.0 W              | 4.62"  |
| 0110000508 | Still River - Housatonic River                | CT-FR-41 | Bethel 3.5 NNE             | 4.96"  |
| 0110000508 | Still River - Housatonic River                | CT-FR-9  | Brookfield 3.3 SSE         | 4.92"  |
| 0110000509 | Pomperaug River                               | CT-LT-34 | Woodbury Center 1.5 SSW    | 5.69"  |
| 0110000511 | Headwaters Naugatuck River                    | CT-LT-7  | Litchfield 2.3 NNE         | 4.61"  |
| 0110000512 | Outlet Naugatuck River                        | CT-NH-67 | Waterbury 1.3 WNW          | 5.37"  |
| 0110000512 | Outlet Naugatuck River                        | CT-NH-47 | Seymour 1.5 NE             | 5.52"  |
| 0110000512 | Outlet Naugatuck River                        | CT-NH-45 | Naugatuck 1.7 NNE          | 7.62"  |
| 0110000512 | Outlet Naugatuck River                        | CT-NH-22 | Prospect 0.5 SW            | 7.93"  |
| 0110000513 | Housatonic River - Frontal Long Island Sound  | CT-FR-77 | Shelton 2.3 WSW            | 5.10"  |
| 0110000513 | Housatonic River - Frontal Long Island Sound  | CT-FR-23 | Shelton 1.3 W              | 6.13"  |

|            |  |           |                       |       |
|------------|--|-----------|-----------------------|-------|
| 0110000513 | Housatonic River - Frontal Long Island Sound | CT-FR-46  | Stratford 0.2 ESE     | 4.84" |
| 0110000513 | Housatonic River - Frontal Long Island Sound | CT-FR-55  | Shelton 2.7 SSE       | 4.99" |
| 0110000513 | Housatonic River - Frontal Long Island Sound | CT-NH-71  | Milford 2.8 SSW       | 4.13" |
| 01100006   | Saugatuck                                    |           |                       |       |
| 0110000601 | Saugatuck River - Frontal Long Island Sound  | CT-FR-58  | Ridgefield 3.6 N      | 4.76" |
| 0110000601 | Saugatuck River - Frontal Long Island Sound  | CT-FR-31  | Newtown 4.6 SSW       | 5.86" |
| 0110000602 | Norwalk River - Frontal Norwalk Harbor       | CT-FR-59  | New Canaan 3.8 N      | 5.02" |
| 0110000602 | Norwalk River - Frontal Norwalk Harbor       | CT-FR-29  | Ridgefield 1.9 SSE    | 5.49" |
| 0110000602 | Norwalk River - Frontal Norwalk Harbor       | CT-FR-63  | Wilton 1.9 NW         | 5.50" |
| 0110000602 | Norwalk River - Frontal Norwalk Harbor       | CT-FR-3   | New Canaan 1.9 ENE    | 6.02" |
| 0110000602 | Norwalk River - Frontal Norwalk Harbor       | CT-FR-25  | Norwalk 2.9 NNW       | 5.73" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-20  | Westport 2.5 ENE      | 5.27" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-68  | Fairfield 1.1 SSE     | 3.47" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-60  | Fairfield 1.5 NE      | 5.07" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-57  | Trumbull 0.9 W        | 5.50" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-32  | Monroe 0.8 W          | 6.74" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-70  | Bridgeport 2.9 NNW    | 5.36" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-67  | Trumbull 1.2 S        | 5.79" |
| 0110000603 | Pequonnock River - Frontal Long Island Sound | CT-FR-26  | Stratford 0.9 W       | 4.82" |
| 0110000604 | Mianus River-Rippowam River                  | CT-FR-83  | Darien 2.4 NW         | 5.69" |
| 0110000604 | Mianus River-Rippowam River                  | CT-FR-66  | Norwalk 1.4 ENE       | 5.71" |
| 02020003   | Hudson-Hoosic                                |           |                       |       |
| 0202000306 | Upper Hoosic River                           | MA-BE-21  | Cheshire 0.5 NNW      | 4.07" |
| 02020006   | Middle Hudson                                |           |                       |       |
| 0202000603 | Wynants Kill - Hudson River                  | NY-AB-21  | NWS Albany            | 3.05" |
| 02030203   | Long Island Sound                            |           |                       |       |
| 0203020300 | Long Island Sound                            | NY-SF-114 | Fishers Island 0.5 NE | 5.83" |

At last! Blue colors dominate our regions! Most areas above 4" and 6"+ in the pale blue areas

### Accumulated Precipitation (in)

October 01, 2020 to October 31, 2020



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: COOP, FAA, CoCoRaHS,

Midwestern Regional Climate Center

cli-MATE: MRCC Application Tools Environment

Generated at: 11/7/2020 8:08:48 AM CST

**“We do not live at the airport”**

At last, a month around normal. This list averaged 4.34”, while our own stations averaged 5.53”.

We are going to see more of this all winter long. When it snows, tipping gauges do not tip. Not that accurately, anyway.

Our network does not use automated gauges! And we do not live at the airport!

| Location            | Station ID | Oct 2020 Precip | Oct departure from normal | Aug-Sep-Oct Precip | 3 month departure from normal | May-Oct Precip | 6 month departure from normal | Nov-Oct Precip | 12 month departure from normal |
|---------------------|------------|-----------------|---------------------------|--------------------|-------------------------------|----------------|-------------------------------|----------------|--------------------------------|
| White Plains NY     | HPN        | 4.15"           | -0.26"                    | 10.94"             | -2.35"                        | 20.36"         | -5.01"                        | 40.74"         | -8.61"                         |
| Danbury CT          | DXR        | 4.17"           | -0.54"                    | 11.52"             | -2.03"                        | 21.67"         | -5.38"                        | 40.77"         | -9.10"                         |
| New Haven CT        | HVN        | 3.36"           | -0.88"                    | 7.99"              | -4.57"                        | 14.94"         | -9.82"                        | 36.35"         | -10.76"                        |
| Meriden CT          | MMK        | 5.52"           | 1.28"                     | 10.54"             | -2.02"                        | 18.74"         | -6.02"                        | 45.56"         | -1.55"                         |
| Hartford CT         | HFD        | 5.74"           | 1.60"                     | 9.38"              | -1.90"                        | 16.68"         | -6.48"                        | 36.43"         | -7.17"                         |
| Willimantic CT      | IJD        | 3.40"           | -1.05"                    | 5.04"              | -7.39"                        | 15.30"         | -9.26"                        | 35.78"         | -12.64"                        |
| New London CT       | GON        | 4.80"           | 0.94"                     | 6.32"              | -5.70"                        | 12.74"         | -11.01"                       | 34.27"         | -12.22"                        |
| Westerly RI         | WST        | 4.82"           | 0.90"                     | 7.00"              | -4.99"                        | 14.53"         | -8.72"                        | 34.85"         | -12.54"                        |
| Newport RI          | UUU        | 5.27"           | 1.44"                     | 7.60"              | -3.86"                        | 13.94"         | -8.31"                        | 34.07"         | -12.26"                        |
| New Bedford MA      | EWB        | 3.66"           | -0.47"                    | 4.53"              | -7.27"                        | 9.44"          | -13.32"                       | 26.35"         | -22.01"                        |
| Hyannis MA          | HYA        | 3.90"           | -0.21"                    | 5.84"              | -5.77"                        | 10.82"         | -11.08"                       | 36.06"         | -11.63"                        |
| Nantucket MA        | ACK        | 4.16"           | 0.24"                     | 7.22"              | -4.65"                        | 12.88"         | -8.99"                        | 35.19"         | -9.23"                         |
| Marthas Vineyard MA | MVY        | 3.86"           | -0.21"                    | 5.46"              | -6.79"                        | 12.76"         | -9.03"                        | 36.79"         | -8.37"                         |
| Taunton MA          | TAN        | 5.90"           | 1.61"                     | 8.86"              | -3.83"                        | 16.44"         | -7.22"                        | 42.56"         | -7.18"                         |
| Plymouth MA         | PYM        | 5.78"           | 1.70"                     | 8.65"              | -3.14"                        | 15.14"         | -7.78"                        | 43.05"         | -6.10"                         |
| Norwood MA          | OWD        | 1.98"           | -2.18"                    | 7.62"              | -4.14"                        | 18.63"         | -4.54"                        | 43.32"         | -3.74"                         |
| Bedford MA          | BED        | 5.01"           | 0.79"                     | 8.16"              | -3.27"                        | 13.96"         | -8.96"                        | 33.66"         | -12.05"                        |
| Lawrence MA         | LWM        | 4.25"           | 0.08"                     | 9.05"              | -2.05"                        | 17.20"         | -5.40"                        | 39.46"         | -3.70"                         |
| Fitchburg MA        | FIT        | 4.18"           | -0.10"                    | 6.56"              | -5.37"                        | 13.28"         | -11.04"                       | 27.66"         | -19.48"                        |
| Orange MA           | ORE        | 2.99"           | -0.80"                    | 7.69"              | -3.20"                        | 15.65"         | -7.64"                        | 36.34"         | -6.21"                         |
| Westfield MA        | BAF        | 5.30"           | 0.55"                     | 11.56"             | -1.84"                        | 17.22"         | -9.06"                        | 38.37"         | -10.02"                        |
| North Adams MA      | AQW        | 3.21"           | -1.53"                    | 10.53"             | -2.51"                        | 17.03"         | -9.63"                        | 33.81"         | -12.80"                        |

## **Rulers of the Snow**

We are the Rulers of the Snow. Even Nolan is catching on to us!

83 stations in October, picking up our first snow fall of the season. Just 1 station shy of last month's record of 84 stations that reported snow fall and snow depth for all days in September 2020.

Using the mobile app? Look at the 2<sup>nd</sup> page of the mobile app, and fill in those snow values. Start off the new Water Year with a new Make a snow fall and snow depth measurement with every Daily Report, if you can safely do so, ***all year round.***

| Station   | Name                    | Oct 2020 Snowfall | Station  | Name                 | Oct 2020 Snowfall |
|-----------|-------------------------|-------------------|----------|----------------------|-------------------|
| MA-WR-41  | Auburn 2.6 SW           | 6.1"              | CT-HR-65 | Newington 1.9 SSW    | 2.1"              |
| MA-MD-42  | Holliston 0.8 S         | 5.5"              | MA-ES-70 | Newburyport 0.6 N    | 2.1"              |
| MA-ES-41  | Danvers 0.8 ESE         | 5.2"              | MA-HS-26 | Easthampton 0.5 SW   | 2.0"              |
| MA-WR-75  | Warren 2.4 WSW          | 5.1"              | MA-ES-12 | Boxford 2.4 S        | 2.0"              |
| MA-NF-1   | Norwood 1.3 NW          | 5.1"              | CT-LT-15 | Colebrook 1.0 NE     | 1.7"              |
| MA-NF-54  | Quincy 1.2 W            | 5.0"              | MA-FR-17 | Buckland 1.8 ESE     | 1.6"              |
| RI-PR-33  | Greenville 0.7 NNW      | 4.8"              | MA-HD-28 | Westfield 2.8 SE     | 1.5"              |
| MA-MD-126 | Melrose 0.5 NE          | 4.8"              | CT-MD-25 | Middlefield 0.6 SE   | 1.5"              |
| CT-TL-2   | Staffordville 0.4 NNW   | 4.6"              | RI-PR-44 | Cranston 4.2 ENE     | 1.5"              |
| RI-KN-14  | Greene 1.4 E            | 4.5"              | MA-FR-12 | Sunderland 1.3 SE    | 1.3"              |
| MA-MD-125 | Tewksbury 3.6 SSE       | 4.5"              | RI-WS-42 | Richmond 4.6 NNE     | 1.2"              |
| MA-MD-156 | Marlborough 2.8 ENE     | 4.5"              | CT-NL-21 | Griswold 0.9 N       | 1.0"              |
| MA-MD-173 | Sudbury 2.7 WNW         | 4.5"              | MA-BE-21 | Cheshire 0.5 NNW     | 0.9"              |
| MA-MD-51  | Maynard 0.7 ESE         | 4.5"              | CT-NL-46 | Mystic 3.4 NW        | 0.7"              |
| MA-MD-85  | Wilmington 2.2 WNW      | 4.5"              | CT-MD-21 | Killingworth 2.6 ESE | 0.5"              |
| MA-WR-8   | Fitchburg 1.6 SSW       | 4.4"              | CT-FR-9  | Brookfield 3.3 SSE   | 0.2"              |
| RI-PR-51  | North Smithfield 0.6 S  | 4.4"              | MA-BA-50 | Falmouth 5.4 NNE     | 0.2"              |
| RI-PR-28  | North Smithfield 0.7 SE | 4.3"              | MA-BA-47 | Mashpee 2.4 WSW      | 0.1"              |
| MA-MD-12  | Acton 1.3 SW            | 4.3"              | CT-LT-22 | New Milford 5.3 SSW  | 0.0"              |
| MA-PL-15  | Abington 1.2 NNE        | 4.3"              | CT-FR-25 | Norwalk 2.9 NNW      | 0.0"              |
| MA-MD-7   | Winchester 0.7 SE       | 4.2"              | CT-FR-3  | New Canaan 1.9 ENE   | 0.0"              |
| RI-PR-55  | Cumberland Hill 3.6 NNE | 4.1"              | CT-NH-57 | New Haven 2.9 NNW    | 0.0"              |

|           |                            |      |           |                        |      |
|-----------|----------------------------|------|-----------|------------------------|------|
| CT-TL-35  | Somersville 0.2 ENE        | 4.0" | MA-FR-10  | Conway 0.9 SW          | 0.0" |
| MA-WR-44  | Westminster 0.6 WSW        | 4.0" | CT-MD-23  | Higganum 0.7 N         | 0.0" |
| MA-BR-61  | Mansfield 2.4 ENE          | 4.0" | CT-NL-19  | Mystic 0.9 W           | 0.0" |
| MA-MD-115 | Hudson 1.4 NW              | 4.0" | CT-NL-29  | East Lyme 0.5 SW       | 0.0" |
| MA-ES-48  | Andover 0.6 E              | 4.0" | CT-NL-32  | Niantic 1.1 SW         | 0.0" |
| CT-LT-9   | New Hartford Center 3.2 SW | 3.7" | CT-NL-6   | New London 1.0 NNW     | 0.0" |
| MA-BR-55  | NWS Boston/Norton 2.5 ESE  | 3.7" | RI-KN-2   | East Greenwich 2.3 ESE | 0.0" |
| CT-TL-27  | Willington 2.7 SE          | 3.6" | RI-WS-37  | Kingston 2.4 SW        | 0.0" |
| CT-HR-8   | North Granby 1.3 ENE       | 3.5" | RI-WS-47  | Westerly 0.8 WNW       | 0.0" |
| RI-PR-82  | Providence 1.6 NNW         | 3.5" | RI-NW-11  | Tiverton 0.8 SSW       | 0.0" |
| MA-BR-8   | Dighton 1.1 WSW            | 3.5" | RI-NW-18  | Jamestown 0.3 SSE      | 0.0" |
| MA-BR-30  | Taunton 3.9 N              | 3.4" | RI-NW-7   | Little Compton 0.6 E   | 0.0" |
| MA-MD-47  | West Townsend 0.5 W        | 3.4" | MA-BA-3   | Falmouth 3.0 E         | 0.0" |
| MA-NF-58  | Plainville 0.6 NNW         | 3.4" | MA-BA-60  | Hyannis 0.7 WNW        | 0.0" |
| MA-ES-4   | Groveland 0.5 WSW          | 3.3" | MA-BA-72  | Yarmouth 2.0 S         | 0.0" |
| RI-PR-45  | Manville 0.4 WSW           | 3.2" | MA-BA-76  | Barnstable 0.7 NE      | 0.0" |
| MA-HD-30  | Hampden 2.0 NW             | 3.1" | MA-DK-2   | Vineyard Haven 0.8 WSW | 0.0" |
| MA-WR-54  | Barre 1.4 NNE              | 2.9" | MA-DK-22  | Edgartown 1.3 WNW      | 0.0" |
| CT-NL-10  | Norwich 2.5 NNE            | 2.9" | NY-SF-114 | Fishers Island 0.5 NE  | 0.0" |
| MA-HD-25  | Ludlow 2.3 SW              | 2.2" |           |                        |      |

October 2020 as a calendar. A count of your Daily Reports by Date. Magenta colors are for the highest counts. Lime green color for the lowest counts.

411 Reports per Day was our record reporting average for October. 26 days of over 400 Daily Reports. 448 Daily Reports for October 17<sup>th</sup> is a single day reporting record for us.

October 2020

| Sun       | Mon       | Tue       | Wed       | Thu       | Fri       | Sat       |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|           |           |           |           | 1<br>413  | 2<br>408  | 3<br>407  |
| 4<br>405  | 5<br>410  | 6<br>415  | 7<br>403  | 8<br>421  | 9<br>405  | 10<br>397 |
| 11<br>400 | 12<br>404 | 13<br>424 | 14<br>433 | 15<br>414 | 16<br>412 | 17<br>448 |
| 18<br>404 | 19<br>402 | 20<br>410 | 21<br>425 | 22<br>409 | 23<br>394 | 24<br>397 |
| 25<br>393 | 26<br>410 | 27<br>409 | 28<br>420 | 29<br>419 | 30<br>428 | 31<br>393 |

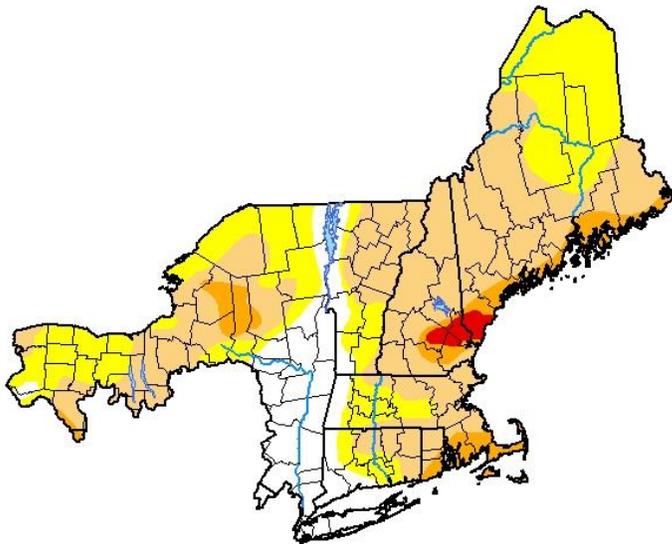
The rains.. and snow... helped! One month alone does not completely erase our deficits. Droughts do not take the winter off!

Keep monitoring and reporting Conditions where you are.

Every drop counts and zeros do too!

## U.S. Drought Monitor Northeast RFC

**November 3, 2020**  
(Released Thursday, Nov. 5, 2020)  
Valid 7 a.m. EST



Drought Conditions (Percent Area)

|   | None   | D0    | D1    | D2    | D3   | D4   |
|---|--------|-------|-------|-------|------|------|
| <b>Current</b>                              | 16.54  | 30.25 | 44.74 | 7.31  | 1.16 | 0.00 |
| <b>Last Week</b><br>10-27-2020              | 10.85  | 23.12 | 50.54 | 11.52 | 3.98 | 0.00 |
| <b>3 Months Ago</b><br>08-04-2020           | 15.93  | 33.57 | 47.13 | 3.37  | 0.00 | 0.00 |
| <b>Start of Calendar Year</b><br>12-31-2019 | 100.00 | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| <b>Start of Water Year</b><br>09-29-2020    | 5.16   | 22.39 | 24.44 | 40.31 | 7.69 | 0.00 |
| <b>One Year Ago</b><br>11-05-2019           | 98.08  | 1.92  | 0.00  | 0.00  | 0.00 | 0.00 |

*Intensity:*

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

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

*Author:*

David Miskus  
NOAA/NWS/NCEP/CPC



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

For a viewing explanation on the Drought Monitor, the CoCoRaHS animated video is on [YouTube](#).

## **Wrap up**

Veterans Day is approaching. A hearty thanks to those members of our network who measure and report within our army of volunteer observers with the same commitment, the same duty-bound determination as they had when they were part of our armed forces. Thank you for your service.

Thanksgiving is approaching too. A unique holiday, each year by presidential proclamation, a National Day of Thanksgiving, in which we pause to give thanks.

Thank you for your volunteer participation in our citizen science network. Behind each number, each dot on the map, is a person with a story. Thank you for telling your story with every report and everything that you type.

Thank you for making our part of the network the growing success that it is. Many dimensions from Daily Reporting, not missing days, Condition Monitoring Reports, Significant Weather Reports, and the Rulers of the Snow have caught Nolan's eye, all continues to rise thanks to your efforts.

The staff at Headquarters would like to express their thanks, at this time of the year, to the observers who reported from October 2019 to September 2020. Login in to your account on the website and access [My Account](#) . Towards the upper right, within your 2020 Water Year, click on the link for Certificate. That action will download a pdf file containing your Certificate of Appreciation, where you can view or print it. Please pass on your feedback about this Certificate to the team at Headquarters at [info@cocorahs.org](mailto:info@cocorahs.org)

Every one of our monthly newsletters concludes with a word of thanks and this season of Thanksgiving will conclude in the same way. Thank you for all that you do for CoCoRaHS, whether in the past, present and in the days to come.