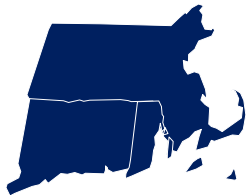


Community Collaborative Rain, Hail & Snow Network



# Southern



# New England

**September 2020**

August started with Isaias coming from the Carolinas, saw storms go west to east through Massachusetts and the month ended with storms from north to south through Connecticut. Another dry month as drought conditions grip our area.

We broke through 11,000 Daily Reports in April and we smashed through 12,000 Daily Reports in August. More record reporting included.

Joe's feature article explains what every observer wants to know: Are the reports used? The answer is an emphatic YES. Read about how the Weather Forecast Office uses the reports you submit in a typical month.

Some news items to share. A tip to use on the mobile app. A tip to use on the website, as well.

Plenty of maps, graphs, tables and lists. A record long list of stations that reported all days this month. The Rulers of the Snow make a strong showing every month. And the last page is full of future events.

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.

### **4000 Daily Reports**

MA-WR-1      Milford 2.3 NNW

### **3000 Daily Reports**

RI-NW-7      Little Compton 0.6 E

### **2000 Daily Reports**

CT-WN-6      Dayville 2.0 ENE  
MA-MD-36      Townsend 2.6 S

### **1000 Daily Reports**

MA-BA-65      Chatham 0.2 SSE  
CT-NL-29      East Lyme 0.5 SW  
CT-NH-47      Seymour 1.5 NE

## **Uses of CoCoRaHS Data at NWS Boston**

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

You submit your Daily Report in the morning. Each week, you submit a Condition Monitoring Report to help describe the ongoing drought conditions. During a thunderstorm, you send a Significant Weather Report after picking up 2 inches of rain in less than one hour. Then you wonder if anyone sees these reports and uses them. The answer is simple - yes! At the NWS Boston office in Norton, MA your reports are used throughout the month in a variety of ways. Let's go through a typical month to show you how.

It's August 1. Starting off the day, our morning shift sends the daily CoCoRaHS observation for station MA-BR-55, NWS Boston/Norton 2.5 ESE. Our Senior Service Hydrologist, Nicole Belk, and our Observation Program Leader, Alan Dunham, start to gather precipitation data from July which is used for several reports, the first being the monthly E-5 Report which provides a summary of rainfall, rainfall departures, and any flooding that occurred during the month and is part of the hydrologic record for southern New England. Gathering the data from CoCoRaHS observers, NWS Cooperative Observers, and automated ASOS stations at airports will take a few days to compile. They also incorporate drought information or any flooding that took place during the month.

NWS Form E-5 (54-2006) (PRES. BY NWS Instruction 10-924)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE		HYDROLOGIC SERVICE AREA (HSA) Boston/Norton MA	
<b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>				REPORT FOR: MONTH      YEAR June        2020	
TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283				SIGNATURE Nicole M. Belk Senior Service Hydrologist DATE August 18 <sup>th</sup> 2020	
<small>When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).</small>					
<input type="checkbox"/> An X inside this box indicates that no flooding occurred within this hydrologic service area.					
<p>June rainfall was below normal across the majority of southern New England. Rainfall totals for the month ranged from 1.25 to 3 inches across the majority of the region. These totals ranged from 1 to around 3 inches below normal. Higher rainfall totals of 3 to 6+ inches were noted from extreme northern RI and the bordering portion of MA, northeastward to the Boston area, and into a portion of southeast MA. These higher totals were 1 inch below normal to greater than 1 inch above normal.</p> <p>Temperatures averaged 1 to 3 degrees above normal for the month. More details for precipitation at major climate sites in the area are provided in Table 1. Maps 1 and 2 provide more details on rainfall and departures from normal across the area. Map 3 depicts the temperature departure from normal for the month.</p> <p>There was one very significant flood event within NWS Boston/Norton's Hydrologic Service Area during June, the most notable impacts occurring in Norwood MA.</p>					

SAMPLE E-5 MONTHLY REPORT OF HYDROLOGIC CONDITIONS

During the following week, it's time to gather data for input for the weekly Drought Monitor. Nicole and Alan review a week's worth of rainfall data and Condition Monitoring Reports from CoCoRaHS, in addition to other factors such as groundwater, streamflow, and reservoir levels. They write a quick email summarizing ongoing conditions and their recommendations for drought levels in the three states and send it to the Northeast DEWS (Drought Early Warning System) group, which is led by the Northeast Regional Climate Center (NERCC). Their input is compiled with others from the Northeast and one recommendation is sent to the Drought Monitor author from NERCC. This process occurs each week with special emphasis on gathering rainfall data and Condition Monitoring Reports during times of unusually dry conditions.

By the middle of the month, it's time to prepare Drought Briefings. The Office has a team, led by Nicole, to create the briefings and present them during meetings with state drought officials from Connecticut, Massachusetts, and Rhode Island. The role of the NWS is to provide information on observed rainfall, rainfall departures, and forecast trends for the next few weeks. CoCoRaHS reports are relied upon to fill in the gaps in precipitation data, since automated airport stations and Cooperative Observer sites are few and far between.

RI 1 month August 2020	Rainfall	Departure	Percent	Normal
Northwest	2.36	-1.97	55	4.33
Northeast	2.00	-2.13	48	4.13
Central West	2.04	-1.98	51	4.02
Central East	1.64	-1.96	46	3.60
Eastern	1.62	-2.18	43	3.80
Southern	1.43	-2.93	33	4.36
New Shoreham	2.97	-1.39	68	4.36

RI 2 month Jul-Aug 20	Rainfall	Departure	Percent	Normal
Northwest	3.86	-4.80	45	8.66
Northeast	4.09	-4.17	50	8.26
Central West	4.15	-3.89	52	8.04
Central East	3.52	-3.68	49	7.20
Eastern	2.91	-4.69	38	7.60
Southern	3.36	-5.36	39	8.72
New Shoreham	3.62	-5.10	42	8.72

SAMPLE TABLE OF 1 MONTH AND 2 MONTH RAINFALL DATA FOR RHODE ISLAND. COCoRaHS STATION TOTALS ARE HEAVILY RELIED UPON!

Later in the month, a line of thunderstorms moves through central Massachusetts and it's apparent the line of storms is capable of producing flash flooding. Flash Flood Warnings are issued as the line reaches Worcester. Not receiving any reports of flooding, the forecasters wonder if it's worth issuing warnings for counties farther to the east. Suddenly, an alert is seen at the office's workstations, notifying them that a CoCoRaHS Significant Weather Report has been received. Quickly, one of the forecasters takes a look and sees a report of unusual street flooding in Andover MA. The report is immediately shared with the other forecasters on duty and warnings are quickly issued for locations that are about to be impacted by the line of storms.

<b>Significant Weather Report</b>	
Station Number:	MA-ES-48
Station Name:	Andover 0.6 E
Date:	8/23/2020 4:05 PM
Submitted	8/23/2020 4:09 PM
Notes:	Thunderstorms with severe downpour. Unusual street flooding already. Intensity if rainfall may be diminishing.
Taken at Registered	True
Location:	
Precip Duration Minutes:	15
New Precip Amount:	0.83 in.
Total Precip Amount:	0.83 in.
New Snow Depth:	NA
Total Snow Depth:	NA
Flooding:	Unusual

SAMPLE OF A SIGNIFICANT WEATHER REPORT.

As you can see, CoCoRaHS reports are used in a variety of ways throughout the months at NWS Boston and other NWS offices, whether it be during drought, flood, severe weather, or winter weather events. We encourage you to submit Daily Reports and weekly Condition Monitoring Reports since these become critical during periods of dry weather. Also, don't forget to submit a Significant Weather Report - it doesn't just have to be for heavy rain or flooding!

## **News Items**

**mPING app for Apple and Android:** It's back! Check your mobile devices. The new app may be there, automatically updated, or you may have to delete and reinstall the app.

For whatever meteorological phenomena comes our way, use mPING someday. In our locale, the value and the relevance of mPING reports increases when we get to snow/rain mixes and their changeovers. Until then, try out mPING. Use it for TEST, NONE, when the rains occur, REDUCED VISIBILITY for that morning fog. Use it wherever you are with your mobile device. Give mPING a look and a try.

**Weatherwise Magazine:** An article portraying a typical day in CoCoRaHS appeared in the July/August issue of *Weatherwise Magazine*. [Linked here](#).

The names are fiction and creative, but many of the facts and figures are for real. We really do have over 22,000 observers that have submitted a report in the past 12 months. About 19,500 observers submitted a report this past August, a single month record. We have 50 million records in our precip database and are adding records at a rate at an increasing rate, nearing 5 million reports per year. That is the picture of the observer in Kauai who measured and reported over 36.49" of precip in 24 hours in April of 2018 – yes, that is verified. Closer to home, there is a rain gauge on a Beacon Street roof in Boston where the American Meteorological Society's HQ is. And through various interfaces, your reports are used every day.

Give the article a read and learn more about the network that you play an important part in. More *Weatherwise* articles about CoCoRaHS [here](#).

**Android mobile app users:** The website migration on August 7<sup>th</sup> went largely well and uneventful. One segment of our observer community was affected: Those using the Android mobile app with a Year 2015 version of the Android operating system, Version 6.0.1. The new security protocols that came with the website migration were not compatible with this operating system.

Android mobile app users now have an optional check box to use to log in.

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

- ✓ Reporting Observers: 474
- ✓ Daily Reports per day: 397
- ✓ Single day record of 426 reports on August 18<sup>th</sup>
- ✓ Single month reporting records for Connecticut and Massachusetts.
- ✓ Condition Monitoring Reports: 158
- ✓ Snow Fall Reports: 6,505
- ✓ Total Snow Water Equivalent (SWE) Reports: 2,439

And leading the entire network with:

- ✓ The highest % of snow depth reports.



## **Observer Tips**

**Significant Weather Reports:** Getting more attention with our recent Message of the Day. Please keep our reporting criteria in mind, as we can alert our area NWS Forecast Offices in real time with what is occurring. Reporting criteria are

- **1” or more of rain in 1 hour or less.**
- **2” or more of rain.** We had 6 reports of 2” or more rain in August. We are asking for Significant Weather Reports when that occurs.
- **Flooding.**
- **Anything you feel is significant.**

**History Function on the Mobile App:** Both the Apple and the Android mobile reporting app have a “History” function. Great for checking reports for obvious mistakes. Also, can be used for seeking missing reports. Tap an entry to edit a report. Even better when the conversation turns towards the recent weather, you can log in to the mobile app, pull up “History” and start making a rough addition of your past reports.

There is more to the mobile app than just submitting a report. You can view and edit your reports as well.

**Total Precipitation Summary:** From the website, View Data, Total Precip Summary. Select a Country, State, County, and a Date Range.

**View Data : Total Precipitation Summary** US Units ▼

**Search Location and Date Range**

**Location:** USA ▼ Massachusetts ▼ ES - Essex ▼

**Date Range:**

**Start Date:** 8/1/2020 ▼ **End Date:** 8/31/2020 ▼

**22 Stations with 644 Reports over 31 Days**

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.	Daily Snow Sum in.	# of Reports	Latitude	Longitude
<a href="#">MA-ES-4</a>	Groveland 0.5 WSW	2.80		2.80	0.0	31	42.747094	71.042626
<a href="#">MA-ES-8</a>	Marblehead 0.8 SW	1.97		1.97	0.0	31	42.49215	70.875798
<a href="#">MA-ES-10</a>	Andover 1.5 W	2.28		2.28	0.0	31	42.6483	71.1728
<a href="#">MA-ES-12</a>	Boxford 2.4 S	2.08		2.08	0.0	31	42.6397	70.9797
<a href="#">MA-ES-20</a>	Haverhill 0.7 N	2.20		2.20	0.0	31	42.794490814209	71.0860595703125
<a href="#">MA-ES-22</a>	Rockport 1.0 E	2.52	0.00	2.52	0.0	26	42.644832	70.599137
<a href="#">MA-ES-24</a>	Newburyport 0.8 SW	2.09		2.09	0.0	31	42.806373	70.89982
<a href="#">MA-ES-25</a>	Gloucester 4.3 N	3.13		3.13	0.0	31	42.679574	70.653507
<a href="#">MA-ES-41</a>	Danvers 0.8 ESE	1.65		1.65	0.0	31	42.568494	70.935267

# of Reports in the column, and Reports on top, is the sum of Daily Reports and Multi-Day Reports. Submit 25 Daily Reports and 1 Multi-Day Report and the # of Reports is 26. Total 640 Daily Reports and 4 Multi-Day Reports and the Reports value on top is 644.

This inquiry tool is the basis for putting together “The List” of stations that so many of you strive to appear on. Copy and paste 3 states worth of these inquiries, along with combining the days covered with Multi-Day Reports, and our 8-page list of stations comes together.

The count of stations is also helpful. It sure beats counting rows one after another!

Your snow total appears here. Not too early to talk about snow.

Click on any column to change the sort sequence. Click on the same column to change the sort sequence again.

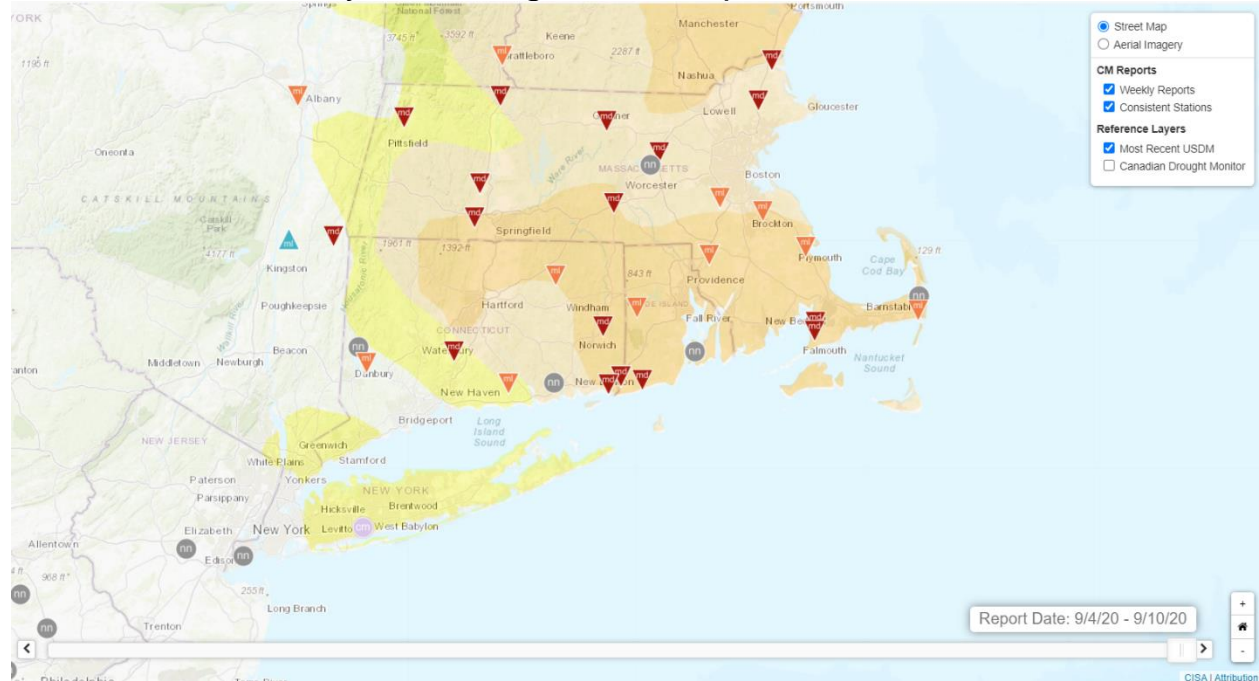
Click on the Station Number value and see that station in Station Precip Summary. Another great way to look for missing reports.

A great inquiry tool for seeing any number of stations, to spot reporting mistakes, missing reports, and to see precip and snow totals.

Spend some time with this website inquiry tool.

**Condition Monitoring Reports:** We are pleased to see so many reports here on this map. This cluster really stands out when looking at this map of reports, zoomed-out, continent-wide.

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.



**Willington 2.7 SE**  
Mon Sep 07 2020

Just 0.43 inch of rain during the past week with several warm and sunny days has produced drier conditions. Some yellow and brown patches have developed in lawns in this neighborhood. Watering of vegetables and ornamental plants has resumed. There is reduced animal activity. Traffic seems to have increased as more residents travel around the area for commerce.

CT-TL-27 -- General Awareness,Agriculture,Business And Industry,Plants And Wildlife

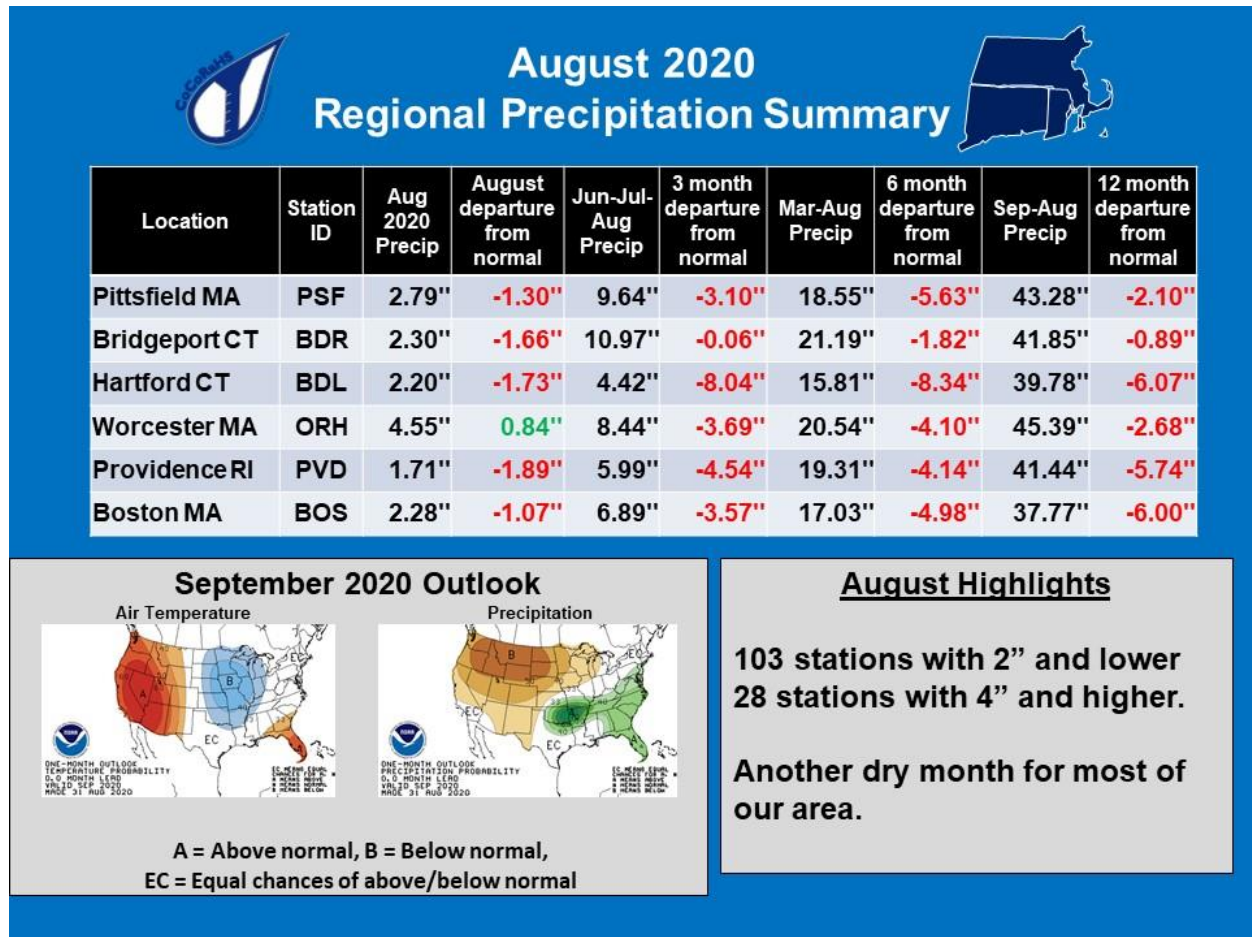
**Westerly 0.8 WNW**  
Sun Sep 06 2020

.5 inches of rain so far in September and some light rain toward the end of August have helped a little. Still dry, but the grass in the sunniest spots looks like it's starting to recover. Garden still required frequent watering, and even with that some of our vegetables (soybeans in particular) died off. We still need significant rain to make up for the deficit. No water restrictions though.

RI-WS-47 -- General Awareness,Plants And Wildlife,Water Supply And Quality

# Detail and Summary for August 2020

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



The first rain for August was on the 3<sup>rd</sup>, over 1" from Sudbury to Hartford. Tropical Storm Isaias raced north bringing its heaviest rain to the western part of our region, shown by the map on the next page, and strong wind gusts and power outages to its east.

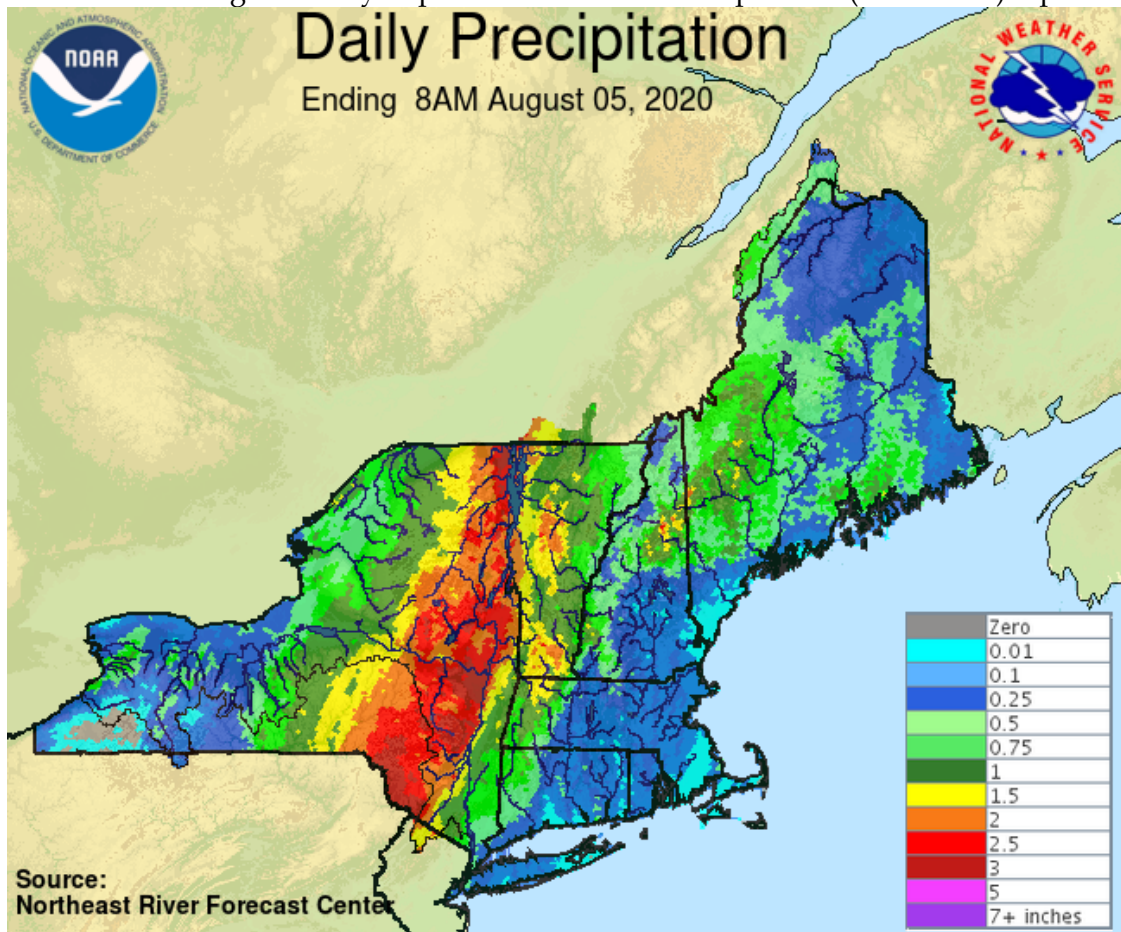
A few spot showers in the week that followed. Southern and eastern sections reported widespread rain on the 17<sup>th</sup> & 18<sup>th</sup>. Storms and warnings from west to east, accompanied by dozens of Significant Weather Reports from MA during Sunday the 24<sup>th</sup>. Storms, warnings, winds, and a tornado in CT during the afternoon of the 27<sup>th</sup>. Rain reported on the 30<sup>th</sup>.

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



## From your reports for August 2020

Observers reporting	<b>474</b>
Reported all 31 days	259
Completed by Multi-Day Reports	45
Missing 1 or 2 reports	68
Daily Reports	<b>12,297</b>
Zero Reports	7,336
Non-Zero Reports	4,961
Daily Comments	2,124
Multi-Day Reports	171
Condition Monitoring Reports	<b>158</b>
Significant Weather Reports	33
Hail Reports	1
Snowfall Reports	<b>6,505</b>
Snow Depth Reports	3,363
Total SWE Reports	<b>2,439</b>
Highest Daily Report	2.82" in East Hampton CT (CT-MD-22) reported on 8/25



A record 304 stations listed here. Congratulations! Keep breaking records!

Welcome to MA-FR-35 coming to us from the Green River.

More details and an editorial how this list of stations comes together: The goal and the objective of "The List" is to show complete and representative precip totals AND to connect one station to another, regardless of state or county.

- The big thing I look for is number of days covered equal to "31" for Jul, Aug, Oct, Dec, etc. and "30" for Sep, Nov, Apr, etc. There is no time to see if there are reports with obvious zeros missed.
- Blending Multi-Day Reports with the results from Total Precip Summary takes up an hour or two, especially for the handful of Multi-Day Reports that span the start or the end of the month. I try to find a way to adjust the amounts and have the station fit in with the others.
- Check for NA reports, especially for days that had precip.
- This list of stations takes about 2-3 hours to put together, and I end up waiting until the night before, to minimize others that do not see their station listed.

Please! Do not get discouraged if your station is not listed. Look to see if you have any missing reports. Keep your reporting focus on not missing days. We are a group of very consistent reporters in the entire network.

If you know your watershed address, locating your station goes quicker.

Watershed	Watershed Name	Station Number	Station Name	Precip
01070004	Nashua			
0107000401	North Nashua River	MA-WR-44	Westminster 0.6 WSW	2.56"
0107000401	North Nashua River	MA-WR-22	Fitchburg 2.0 NNE	2.31"
0107000402	Headwaters Nashua River	MA-WR-56	Sterling 4.3 NW	2.96"
0107000402	Headwaters Nashua River	MA-WR-58	Lunenburg 0.6 NE	1.89"
0107000402	Headwaters Nashua River	MA-MD-25	Ayer 0.1 SW	1.40"
0107000403	Squannacook River	MA-MD-47	West Townsend 0.5 W	2.27"
0107000403	Squannacook River	MA-MD-36	Townsend 2.6 S	2.43"
0107000404	Nissitissit River-Nashua River	MA-MD-169	Pepperell 2.1 SSW	1.83"
01070005	Concord			
0107000501	Sudbury River	MA-MD-156	Marlborough 2.8 ENE	4.07"

0107000501	Sudbury River	MA-MD-89	Sudbury 3.6 W	4.47"
0107000501	Sudbury River	MA-MD-107	Framingham 1.7 E	3.15"
0107000502	Concord River	MA-WR-30	Shrewsbury 1.6 NNE	3.57"
0107000502	Concord River	MA-WR-28	Berlin 1.3 WSW	3.07"
0107000502	Concord River	MA-WR-42	Northborough 2.3 N	3.03"
0107000502	Concord River	MA-MD-115	Hudson 1.4 NW	2.89"
0107000502	Concord River	MA-WR-55	Harvard 2.1 S	1.72"
0107000502	Concord River	MA-MD-12	Acton 1.3 SW	2.20"
0107000502	Concord River	MA-MD-51	Maynard 0.7 ESE	3.36"
0107000502	Concord River	MA-MD-62	Chelmsford 1.2 E	1.92"
01070006	Merrimack River			
0107000612	Stony Brook - Merrimack River	MA-MD-104	Littleton 2.8 NNW	1.74"
0107000612	Stony Brook - Merrimack River	MA-MD-93	Westford 1.5 SSW	2.78"
0107000612	Stony Brook - Merrimack River	MA-ES-10	Andover 1.5 W	2.28"
0107000613	Shawsheen River	MA-MD-52	Lexington 0.6 SW	1.45"
0107000613	Shawsheen River	MA-ES-48	Andover 0.6 E	2.83"
0107000614	Powwow River - Merrimack River	MA-ES-66	North Andover 0.3 NW	1.87"
0107000614	Powwow River - Merrimack River	MA-ES-20	Haverhill 0.7 N	2.20"
0107000614	Powwow River - Merrimack River	MA-ES-4	Groveland 0.5 WSW	2.80"
0107000614	Powwow River - Merrimack River	MA-ES-61	Amesbury 2.6 WSW	1.63"
0107000614	Powwow River - Merrimack River	MA-ES-59	Amesbury 1.2 N	1.69"
0107000614	Powwow River - Merrimack River	MA-ES-68	Newburyport 1.3 WNW	1.64"
0107000614	Powwow River - Merrimack River	MA-ES-64	Newburyport 0.4 NNW	1.85"
0107000614	Powwow River - Merrimack River	MA-ES-70	Newburyport 0.6 N	1.72"
01080201	Middle Connecticut			
0108020105	Green River	MA-FR-35	Bernardston 1.0 SW	3.09"
0108020106	Manhan River - Connecticut River	MA-HS-2	Westhampton 1.8 SW	2.51"
0108020106	Manhan River - Connecticut River	MA-HS-8	Williamsburg 1.2 WSW	2.46"
0108020106	Manhan River - Connecticut River	MA-HS-12	Northampton 0.4 S	1.90"
0108020106	Manhan River - Connecticut River	MA-FR-12	Sunderland 1.3 SE	2.79"
0108020107	Batchelor Brook - Connecticut River	MA-HD-22	Holyoke 1.0 ENE	2.16"
0108020107	Batchelor Brook - Connecticut River	MA-HD-13	Springfield 4.1 W	1.88"
01080202	Miller			
0108020201	Upper Millers River	NH-CH-20	Rindge 3.2 ESE	2.67"
0108020202	Lower Millers River	MA-WR-40	Gardner 1.4 SSW	4.09"
01080203	Deerfield			
0108020303	North River	MA-FR-31	Colrain 3.7 WNW	3.64"
0108020303	North River	MA-FR-29	Colrain 0.8 WNW	3.20"
0108020305	Lower Deerfield River	MA-FR-17	Buckland 1.8 ESE	4.49"
0108020305	Lower Deerfield River	MA-FR-13	Conway 2.9 NW	4.86"
0108020305	Lower Deerfield River	MA-FR-10	Conway 0.9 SW	3.65"

01080204	Chicopee			
0108020402	Ware River	MA-WR-54	Barre 1.4 NNE	3.48"
0108020403	Quaboag River	MA-WR-75	Warren 2.4 WSW	5.06"
0108020404	Chicopee River	MA-HD-25	Ludlow 2.3 SW	2.74"
01080205	Lower Connecticut			
0108020501	Mill River - Connecticut River	CT-HR-82	Suffield 0.5 NNE	2.96"
0108020501	Mill River - Connecticut River	CT-HR-57	Suffield Depot 3.3 NNE	2.45"
0108020501	Mill River - Connecticut River	MA-HD-30	Hampden 2.0 NW	3.04"
0108020502	Scantic River	CT-TL-35	Somersville 0.2 ENE	2.36"
0108020502	Scantic River	CT-TL-41	Somers 0.3 S	2.53"
0108020503	Park River	CT-HR-39	Farmington 1.6 SW	1.66"
0108020503	Park River	CT-HR-49	West Hartford 1.1 W	1.93"
0108020503	Park River	CT-HR-53	Hartford 2.0 SW	1.30"
0108020504	Hockanum River	CT-HR-52	Central Manchester 0.8 N	2.62"
0108020505	Roaring Brook - Connecticut River	CT-HR-6	Wethersfield 1.2 WSW	2.99"
0108020505	Roaring Brook - Connecticut River	CT-HR-45	Wethersfield 1.9 SSW	3.73"
0108020505	Roaring Brook - Connecticut River	CT-HR-68	Rocky Hill 1.3 E	2.42"
0108020505	Roaring Brook - Connecticut River	CT-HR-22	East Hartford 1.3 E	3.02"
0108020505	Roaring Brook - Connecticut River	CT-HR-7	Central Manchester 2.7 SW	3.62"
0108020506	Mattabesset River	CT-HR-15	Southington 3.0 E	2.71"
0108020506	Mattabesset River	CT-HR-80	Kensington 0.7 WSW	2.72"
0108020506	Mattabesset River	CT-HR-65	Newington 1.9 SSW	3.04"
0108020506	Mattabesset River	CT-MD-25	Middlefield 0.6 SE	2.15"
0108020507	Higganum Creek - Connecticut River	CT-MD-23	Higganum 0.7 N	3.08"
0108020507	Higganum Creek - Connecticut River	CT-MD-26	Higganum 0.8 NE	2.37"
0108020508	Salmon River	CT-MD-22	East Hampton 2.1 N	4.27"
0108020509	Eightmile River - Connecticut River	CT-NL-44	Old Lyme 0.5 W	3.44"
01080206	Westfield			
0108020601	Headwaters Westfield River	MA-HS-7	Plainfield 2.2 SW	4.47"
0108020601	Headwaters Westfield River	MA-HS-14	Plainfield 2.4 ESE	3.98"
0108020603	Outlet Westfield River	MA-HD-31	Westfield 1.6 SSW	2.22"
0108020603	Outlet Westfield River	CT-HR-88	Suffield Depot 6.0 WNW	2.33"
0108020603	Outlet Westfield River	MA-HD-28	Westfield 2.8 SE	2.46"
0108020603	Outlet Westfield River	MA-HD-29	West Springfield 1.6 SSW	1.39"
01080207	Farmington			
0108020701	Still River	CT-LT-15	Colebrook 1.0 NE	3.34"
0108020702	West Branch Farmington River	CT-LT-18	New Hartford Center 1.5 N	3.57"
0108020704	Headwaters Farmington River	CT-LT-9	New Hartford Center 3.2 SW	2.97"
0108020704	Headwaters Farmington River	CT-HR-28	North Canton 0.8 SSW	2.20"
0108020705	Salmon Brook	CT-HR-8	North Granby 1.3 ENE	3.01"
01090001	Charles			



0109000101	Plum Island Sound - Frontal Atlantic Ocean	MA-ES-24	Newburyport 0.8 SW	2.09"
0109000102	Ipswich River	MA-MD-85	Wilmington 2.2 WNW	2.10"
0109000102	Ipswich River	MA-MD-125	Tewksbury 3.6 SSE	2.09"
0109000102	Ipswich River	MA-MD-45	Wilmington 1.5 NE	2.88"
0109000102	Ipswich River	MA-MD-160	Reading 1.2 N	2.50"
0109000102	Ipswich River	MA-ES-58	Middleton 1.4 SSW	2.26"
0109000102	Ipswich River	MA-ES-12	Boxford 2.4 S	2.08"
0109000103	Essex River - Frontal Atlantic Ocean	MA-ES-41	Danvers 0.8 ESE	1.65"
0109000103	Essex River - Frontal Atlantic Ocean	MA-ES-54	Gloucester 2.1 NW	2.15"
0109000103	Essex River - Frontal Atlantic Ocean	MA-ES-25	Gloucester 4.3 N	3.13"
0109000103	Essex River - Frontal Atlantic Ocean	MA-ES-22	Rockport 1.0 E	2.52"
0109000104	Saugus River - Frontal Broad Sound	MA-MD-81	Wakefield 0.5 NNW	2.19"
0109000104	Saugus River - Frontal Broad Sound	MA-MD-126	Melrose 0.5 NE	2.60"
0109000104	Saugus River - Frontal Broad Sound	MA-ES-45	Nahant 0.4 N	1.74"
0109000104	Saugus River - Frontal Broad Sound	MA-ES-8	Marblehead 0.8 SW	1.97"
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-123	Lexington 1.3 SE	1.39"
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-7	Winchester 0.7 SE	1.59"
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-44	Medford 1.2 W	2.21"
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-11	Cambridge 0.9 NNW	2.02"
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-170	Somerville 0.5 W	2.02"
0109000106	Upper Charles River	MA-WR-1	Milford 2.3 NNW	3.71"
0109000106	Upper Charles River	MA-MD-106	Holliston 2.4 W	3.06"
0109000106	Upper Charles River	MA-MD-55	Holliston 0.7 W	3.47"
0109000106	Upper Charles River	MA-MD-42	Holliston 0.8 S	3.66"
0109000106	Upper Charles River	MA-MD-158	Sherborn 1.1 NW	3.30"
0109000106	Upper Charles River	MA-NF-11	Millis 2.0 SW	2.29"
0109000106	Upper Charles River	MA-NF-50	Millis 1.4 ENE	3.01"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-MD-120	Natick 1.9 NNE	2.92"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-MD-80	Lincoln 1.5 SW	2.64"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-MD-119	Watertown 1.1 W	2.28"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-MD-151	Cambridge 0.9 SSE	1.52"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-MD-134	Somerville 0.5 SSE	1.74"
0109000108	Neponset River - Frontal Boston Harbor	MA-NF-1	Norwood 1.3 NW	3.14"
0109000108	Neponset River - Frontal Boston Harbor	MA-NF-54	Quincy 1.2 W	2.36"
0109000109	Whitmans Pond - Frontal Boston Harbor	MA-NF-32	Quincy 1.8 WSW	2.69"
0109000109	Whitmans Pond - Frontal Boston Harbor	MA-NF-39	Weymouth 2.3 N	1.80"
0109000109	Whitmans Pond - Frontal Boston Harbor	MA-PL-36	Hingham 0.8 ESE	1.60"
01090002	Cape Cod			
0109000201	North River - Frontal Massachusetts Bay	MA-PL-57	Hanson 1.8 N	2.23"
0109000201	North River - Frontal Massachusetts Bay	MA-PL-5	Kingston 3.3 WNW	2.83"
0109000201	North River - Frontal Massachusetts Bay	MA-PL-37	Scituate 1.2 NW	1.84"

0109000201	North River - Frontal Massachusetts Bay	MA-PL-48	Marshfield 1.5 NNW	1.83"
0109000202	Cape Cod	MA-BA-2	Falmouth 3.1 NNW	2.45"
0109000202	Cape Cod	MA-BA-57	Falmouth 5.7 N	2.71"
0109000202	Cape Cod	MA-BA-13	Falmouth 0.6 NNW	1.94"
0109000202	Cape Cod	MA-BA-50	Falmouth 5.4 NNE	2.23"
0109000202	Cape Cod	MA-BA-17	East Falmouth 1.2 WNW	1.81"
0109000202	Cape Cod	MA-BA-19	East Falmouth 0.7 NW	2.74"
0109000202	Cape Cod	MA-BA-3	Falmouth 3.0 E	2.23"
0109000202	Cape Cod	MA-BA-11	East Falmouth 1.4 ESE	1.94"
0109000202	Cape Cod	MA-BA-83	Mashpee 2.5 W	2.57"
0109000202	Cape Cod	MA-BA-47	Mashpee 2.4 WSW	2.75"
0109000202	Cape Cod	MA-BA-45	Sandwich 0.9 NNE	1.42"
0109000202	Cape Cod	MA-BA-64	Sandwich 1.5 SSE	1.35"
0109000202	Cape Cod	MA-BA-79	Mashpee 0.8 SSW	2.09"
0109000202	Cape Cod	MA-BA-78	Mashpee 4.6 S	2.11"
0109000202	Cape Cod	MA-BA-10	East Sandwich 2.3 SE	1.45"
0109000202	Cape Cod	MA-BA-59	Barnstable 3.6 W	1.35"
0109000202	Cape Cod	MA-BA-76	Barnstable 0.7 NE	1.04"
0109000202	Cape Cod	MA-BA-22	Yarmouth 0.9 NNW	1.41"
0109000202	Cape Cod	MA-BA-72	Yarmouth 2.0 S	1.30"
0109000202	Cape Cod	MA-BA-80	Brewster 1.4 W	1.46"
0109000202	Cape Cod	MA-BA-52	Truro 0.8 E	1.00"
0109000202	Cape Cod	MA-BA-36	Harwich 2.6 ENE	1.47"
0109000202	Cape Cod	MA-BA-42	Orleans 1.8 S	1.39"
0109000202	Cape Cod	MA-BA-51	Orleans 3.0 S	1.33"
0109000202	Cape Cod	MA-BA-12	Orleans 1.1 E	1.21"
0109000202	Cape Cod	MA-BA-30	Eastham 0.6 SW	2.02"
0109000202	Cape Cod	MA-BA-43	Chatham 0.4 WSW	1.55"
0109000203	Mattapoisett River - Frontal Buzzards Bay	MA-PL-52	Plymouth 10.6 SSE	1.49"
0109000204	Paskamanset River - Frontal Buzzards Bay	MA-BR-14	Dartmouth 2.5 SSW	1.37"
0109000204	Paskamanset River - Frontal Buzzards Bay	MA-BR-52	New Bedford 4.3 N	1.45"
0109000205	Sakonnet Point - Frontal Rhode Island Sound	RI-NW-5	Little Compton 1.7 NW	2.19"
0109000205	Sakonnet Point - Frontal Rhode Island Sound	RI-NW-7	Little Compton 0.6 E	1.57"
0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-14	Naushon Island 3.0 NE	1.05"
0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-5	West Tisbury 2.9 N	1.24"
0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-9	West Tisbury 0.4 S	1.60"
0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-18	Oak Bluffs 0.1 SW	1.02"
0109000207	Nantucket Island	MA-NT-9	Nantucket 5.9 ESE	2.41"
01090003	Blackstone			
0109000301	Upper Blackstone River	MA-WR-41	Auburn 2.6 SW	4.75"
0109000301	Upper Blackstone River	MA-WR-43	Leicester 2.4 ESE	5.32"

0109000301	Upper Blackstone River	MA-WR-81	Worcester 1.6 SE	5.03"
0109000301	Upper Blackstone River	MA-WR-70	Grafton 1.5 W	4.37"
0109000301	Upper Blackstone River	MA-WR-69	Northbridge 1.7 WNW	3.73"
0109000302	Lower Blackstone River	RI-PR-50	Harrisville 1.2 SSE	2.40"
0109000302	Lower Blackstone River	RI-PR-28	North Smithfield 0.7 SE	2.27"
0109000302	Lower Blackstone River	RI-PR-89	Woonsocket 1.8 WNW	1.95"
0109000302	Lower Blackstone River	RI-PR-45	Manville 0.4 WSW	2.54"
0109000302	Lower Blackstone River	MA-NF-26	Bellingham 2.4 S	1.99"
0109000302	Lower Blackstone River	RI-PR-59	Cumberland Hill 0.9 NW	2.53"
0109000302	Lower Blackstone River	RI-PR-55	Cumberland Hill 3.6 NNE	2.67"
01090004	Narragansett			
0109000401	Upper Taunton River	MA-BR-30	Taunton 3.9 N	2.05"
0109000401	Upper Taunton River	MA-NF-31	Stoughton 1.2 E	4.40"
0109000401	Upper Taunton River	MA-PL-22	East Bridgewater 0.3 WSW	3.39"
0109000401	Upper Taunton River	MA-PL-23	Pembroke 2.8 SW	3.10"
0109000402	Middle Taunton River	MA-PL-31	Bridgewater 1.8 SE	2.08"
0109000402	Middle Taunton River	MA-PL-17	Plympton 0.9 NNE	2.06"
0109000403	Threemile River	MA-NF-19	Foxborough 1.8 SSW	3.83"
0109000403	Threemile River	MA-BR-55	NWS Boston/Norton 2.5 ESE	2.70"
0109000404	Ten Mile River	MA-NF-58	Plainville 0.6 NNW	2.70"
0109000404	Ten Mile River	MA-BR-23	Attleboro 0.9 ENE	1.58"
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-33	Greenville 0.7 NNW	1.59"
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-51	North Smithfield 0.6 S	2.45"
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-82	Providence 1.6 NNW	1.60"
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-53	Providence 1.7 N	1.27"
0109000406	Pawtuxet River	RI-KN-21	Coventry 1.9 NE	2.25"
0109000406	Pawtuxet River	RI-PR-71	Cranston 1.3 N	1.77"
0109000406	Pawtuxet River	RI-PR-57	Cranston 1.2 SSE	2.19"
0109000406	Pawtuxet River	RI-PR-44	Cranston 4.2 ENE	1.70"
0109000407	Palmer River	RI-BR-11	Bristol 2.0 NNW	2.11"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-3	Norton 1.8 NNE	3.45"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-16	Somerset 0.4 SSE	1.73"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-58	Dighton 3.3 NNW	1.42"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-8	Dighton 1.1 WSW	1.47"
0109000409	Narragansett Bay	RI-KN-17	East Greenwich 1.2 NNE	1.71"
0109000409	Narragansett Bay	RI-WS-54	North Kingstown 2.7 WSW	1.42"
0109000409	Narragansett Bay	RI-WS-31	Kingston 7.5 NNE	1.54"
0109000409	Narragansett Bay	RI-WS-44	North Kingstown 1.5 SSW	1.27"
0109000409	Narragansett Bay	RI-KN-15	Warwick 4.3 SSW	1.04"
0109000409	Narragansett Bay	RI-KN-2	East Greenwich 2.3 ESE	1.40"
0109000409	Narragansett Bay	RI-KN-23	Warwick 3.2 NNE	1.44"

0109000409	Narragansett Bay	RI-KN-31	Warwick 0.8 ENE	1.32"
0109000409	Narragansett Bay	RI-PR-67	Providence 1.6 NE	1.36"
0109000409	Narragansett Bay	RI-PR-84	Providence 2.7 NNE	1.36"
0109000409	Narragansett Bay	RI-NW-18	Jamestown 0.3 SSE	1.88"
0109000409	Narragansett Bay	RI-BR-5	Barrington 1.3 WNW	1.33"
0109000409	Narragansett Bay	RI-NW-27	Newport 1.3 SW	1.42"
0109000409	Narragansett Bay	RI-NW-4	Middletown 1.1 SW	1.14"
0109000409	Narragansett Bay	RI-NW-19	Portsmouth 2.3 S	1.55"
0109000409	Narragansett Bay	RI-NW-16	Portsmouth 1.3 S	1.41"
0109000409	Narragansett Bay	MA-BR-63	Swansea 2.1 W	2.00"
0109000409	Narragansett Bay	RI-NW-28	Portsmouth 3.7 NNE	1.42"
0109000409	Narragansett Bay	RI-NW-20	Tiverton 1.0 SSW	1.99"
01090005	Pawcatuck-Wood			
0109000501	Wood River	RI-WS-64	Hope Valley 1.8 NE	2.06"
0109000502	Upper Pawcatuck River	RI-WS-42	Richmond 4.6 NNE	1.57"
0109000502	Upper Pawcatuck River	RI-WS-37	Kingston 2.4 SW	1.43"
0109000503	Lower Pawcatuck River	CT-NL-40	Pawcatuck 1.8 SSE	1.53"
0109000503	Lower Pawcatuck River	RI-WS-30	Westerly 2.4 NNW	1.36"
0109000503	Lower Pawcatuck River	RI-WS-47	Westerly 0.8 WNW	1.43"
0109000504	Frontal Block Island Sound	RI-WS-36	Charlestown 3.0 WSW	1.79"
0109000504	Frontal Block Island Sound	RI-WS-53	Charlestown 0.7 SE	1.75"
0109000504	Frontal Block Island Sound	RI-WS-26	Charlestown 1.1 ENE	1.46"
0109000504	Frontal Block Island Sound	RI-WS-55	Wakefield 0.8 ENE	1.43"
01100001	Quinebaug			
0110000102	French River	CT-WN-2	North Grosvenor Dale 1.7 SSE	1.52"
0110000102	French River	MA-WR-68	Oxford 0.9 SSW	2.99"
0110000103	Fivemile River	CT-WN-6	Dayville 2.0 ENE	2.80"
0110000105	Moosup River	CT-WN-8	Moosup 1.7 NE	2.34"
0110000105	Moosup River	RI-KN-14	Greene 1.4 E	2.10"
01100002	Shetucket			
0110000201	Willimantic River	CT-TL-18	Hebron 5.3 NW	2.92"
0110000201	Willimantic River	CT-TL-40	Coventry 0.3 NNE	2.18"
0110000201	Willimantic River	CT-TL-32	Coventry 2.3 N	1.84"
0110000201	Willimantic River	CT-TL-24	Stafford Springs 0.8 NE	3.03"
0110000201	Willimantic River	CT-TL-2	Staffordville 0.4 NNW	3.36"
0110000202	Natchaug River	CT-TL-27	Willington 2.7 SE	3.95"
0110000202	Natchaug River	CT-WN-12	Eastford 2.0 W	3.11"
0110000203	Shetucket River	CT-NL-10	Norwich 2.5 NNE	2.44"
01100003	Thames			
0110000302	Thames River-Frontal New London Harbor	CT-NL-5	Oakdale 2.6 WNW	2.35"
0110000302	Thames River-Frontal New London Harbor	CT-NL-6	New London 1.0 NNW	2.81"

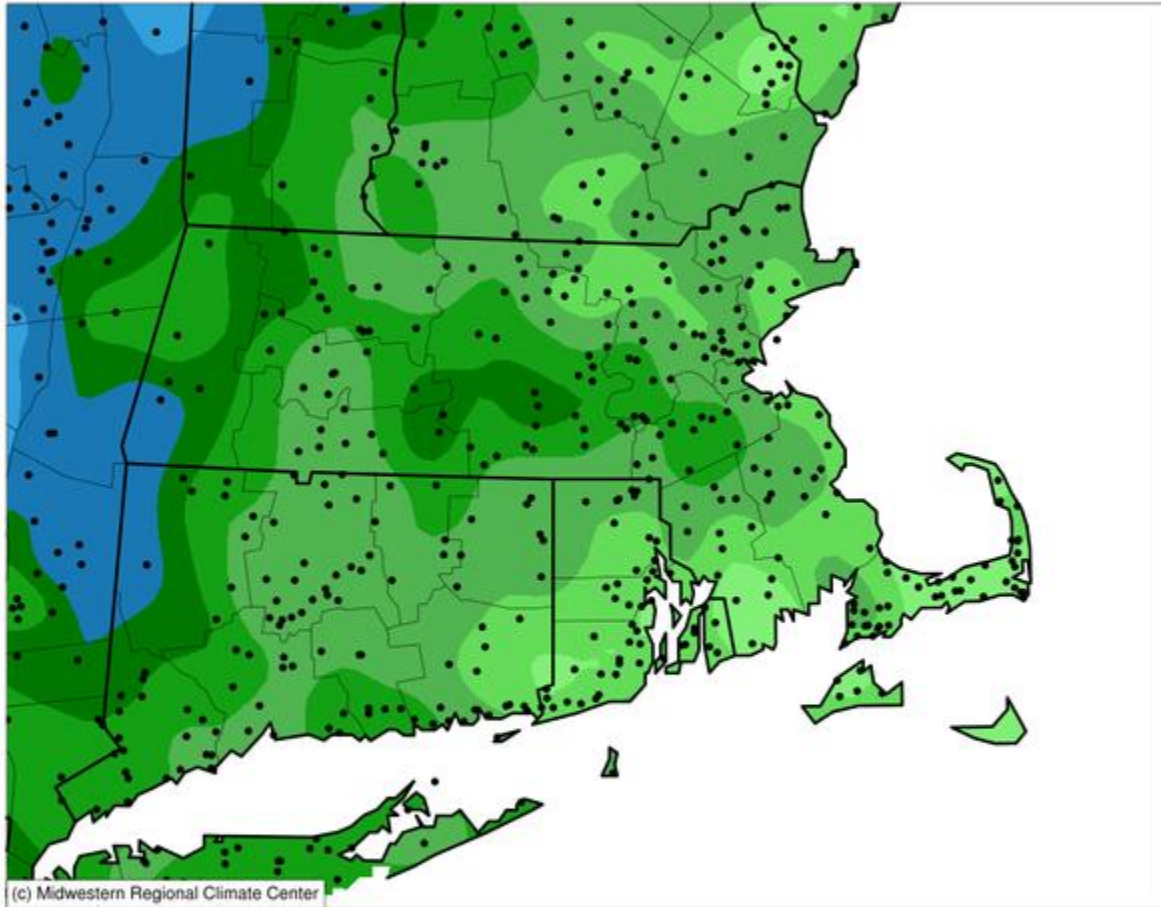
0110000302	Thames River-Frontal New London Harbor	CT-NL-8	Uncasville-Oxoboxo Valley 1.6 ENE	1.21"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-38	Old Lyme 3.4 ESE	3.33"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-29	East Lyme 0.5 SW	2.98"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-32	Niantic 1.1 SW	3.01"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-22	Central Waterford 2.7 SSW	2.82"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-46	Mystic 3.4 NW	1.85"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-37	Mystic 1.6 W	2.28"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-19	Mystic 0.9 W	2.22"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-24	Stonington 1.4 NNW	1.69"
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-18	Stonington 0.5 NNE	1.62"
01100004	Quinnipiac			
0110000401	Quinnipiac River	CT-NH-14	Prospect 1.9 ENE	2.67"
0110000401	Quinnipiac River	CT-HR-55	Southington 1.7 WNW	1.74"
0110000401	Quinnipiac River	CT-HR-23	Southington 0.9 SSE	2.71"
0110000401	Quinnipiac River	CT-HR-76	Southington 1.0 ENE	1.89"
0110000401	Quinnipiac River	CT-NH-44	Wallingford Center 1.9 WNW	2.99"
0110000401	Quinnipiac River	CT-NH-43	Wallingford Center 3.3 NNW	2.88"
0110000401	Quinnipiac River	CT-HR-43	Southington 2.5 NE	1.93"
0110000401	Quinnipiac River	CT-NH-75	Meriden 2.8 WSW	3.00"
0110000401	Quinnipiac River	CT-NH-42	Wallingford Center 1.1 N	2.53"
0110000401	Quinnipiac River	CT-NH-72	Northford 0.8 SW	3.26"
0110000402	Hammonasset River - Frontal Long Island Sound	CT-NH-60	Branford Center 1.9 SSW	2.70"
0110000402	Hammonasset River - Frontal Long Island Sound	CT-NH-41	Madison Center 1.6 W	3.59"
0110000402	Hammonasset River - Frontal Long Island Sound	CT-NH-50	Madison Center 4.1 N	4.69"
0110000402	Hammonasset River - Frontal Long Island Sound	CT-MD-31	Killingworth 0.7 WNW	4.62"
0110000402	Hammonasset River - Frontal Long Island Sound	CT-MD-21	Killingworth 2.6 ESE	3.70"
0110000402	Hammonasset River - Frontal Long Island Sound	CT-MD-27	Clinton 3.7 N	3.69"
0110000403	Mill River - Frontal Long Island Sound	CT-NH-39	West Haven 0.8 W	2.86"
0110000403	Mill River - Frontal Long Island Sound	CT-NH-57	New Haven 2.9 NNW	3.08"
01100005	Housatonic			
0110000501	Headwaters Housatonic River	MA-BE-11	Great Barrington 3.0 N	6.22"
0110000501	Headwaters Housatonic River	MA-BE-3	Stockbridge .2 NNE	4.39"
0110000501	Headwaters Housatonic River	MA-BE-20	Lee 3.7 SE	4.96"
0110000501	Headwaters Housatonic River	MA-BE-22	Dalton 2.9 SW	3.50"
0110000504	Macedonia Brook - Housatonic River	CT-LT-20	Warren 2.4 WNW	5.79"
0110000506	Candlewood Lake-Housatonic River	CT-LT-37	New Milford 3.1 WNW	4.20"
0110000506	Candlewood Lake-Housatonic River	CT-LT-22	New Milford 5.3 SSW	3.61"
0110000508	Still River - Housatonic River	CT-FR-43	Bethel 0.5 E	4.40"
0110000508	Still River - Housatonic River	CT-FR-41	Bethel 3.5 NNE	4.82"
0110000508	Still River - Housatonic River	CT-FR-9	Brookfield 3.3 SSE	3.77"
0110000509	Pomperaug River	CT-LT-34	Woodbury Center 1.5 SSW	4.12"

0110000512	Outlet Naugatuck River	CT-LT-14	Watertown 0.5 S	4.44"
0110000512	Outlet Naugatuck River	CT-NH-67	Waterbury 1.3 WNW	4.21"
0110000512	Outlet Naugatuck River	CT-NH-47	Seymour 1.5 NE	2.92"
0110000512	Outlet Naugatuck River	CT-NH-45	Naugatuck 1.7 NNE	4.07"
0110000512	Outlet Naugatuck River	CT-NH-22	Prospect 0.5 SW	3.72"
0110000513	Housatonic River - Frontal Long Island Sound	CT-FR-77	Shelton 2.3 WSW	3.78"
0110000513	Housatonic River - Frontal Long Island Sound	CT-FR-23	Shelton 1.3 W	3.40"
0110000513	Housatonic River - Frontal Long Island Sound	CT-FR-46	Stratford 0.2 ESE	2.29"
0110000513	Housatonic River - Frontal Long Island Sound	CT-FR-55	Shelton 2.7 SSE	3.38"
0110000513	Housatonic River - Frontal Long Island Sound	CT-NH-71	Milford 2.8 SSW	1.69"
01100006	Saugatuck			
0110000601	Saugatuck River - Frontal Long Island Sound	CT-FR-58	Ridgefield 3.6 N	3.71"
0110000601	Saugatuck River - Frontal Long Island Sound	CT-FR-64	Bethel 4.5 SSE	3.62"
0110000602	Norwalk River - Frontal Norwalk Harbor	CT-FR-59	New Canaan 3.8 N	3.77"
0110000602	Norwalk River - Frontal Norwalk Harbor	CT-FR-29	Ridgefield 1.9 SSE	3.75"
0110000602	Norwalk River - Frontal Norwalk Harbor	CT-FR-63	Wilton 1.9 NW	3.84"
0110000602	Norwalk River - Frontal Norwalk Harbor	CT-FR-3	New Canaan 1.9 ENE	2.91"
0110000602	Norwalk River - Frontal Norwalk Harbor	CT-FR-25	Norwalk 2.9 NNW	2.72"
0110000603	Pequonnock River - Frontal Long Island Sound	CT-FR-68	Fairfield 1.1 SSE	2.96"
0110000603	Pequonnock River - Frontal Long Island Sound	CT-FR-60	Fairfield 1.5 NE	2.83"
0110000603	Pequonnock River - Frontal Long Island Sound	CT-FR-70	Bridgeport 2.9 NNW	2.08"
0110000603	Pequonnock River - Frontal Long Island Sound	CT-FR-67	Trumbull 1.2 S	2.31"
0110000603	Pequonnock River - Frontal Long Island Sound	CT-FR-26	Stratford 0.9 W	2.00"
0110000604	Mianus River-Rippowam River	CT-FR-39	Stamford 4.2 S	4.63"
0110000604	Mianus River-Rippowam River	CT-FR-35	Darien 1.8 ENE	3.43"
02020003	Hudson-Hoosic			
0202000306	Upper Hoosic River	MA-BE-21	Cheshire 0.5 NNW	3.65"
02020006	Middle Hudson			
0202000603	Wynants Kill - Hudson River	NY-AB-21	NWS Albany	5.60"
02030203	Long Island Sound			
0203020300	Long Island Sound	NY-SF-114	Fishers Island 0.5 NE	2.59"

The blue colors, above 5", from the influence of Tropical Storm Isaias that came through in the beginning of August. Lower totals towards the eastern part of our region. Overall, another dry month for our area.

# Accumulated Precipitation (in)

August 01, 2020 to August 31, 2020



0.01 0.1 0.5 1 1.5 2 3 4 5 7.5 10 12.5 15

Stations from the following networks used: COOP, FAA, CoCoRaHS,

Midwestern Regional Climate Center

cli-MATE: MRCC Application Tools Environment

Generated at: 9/9/2020 9:09:56 PM CDT

**“We do not live at the airport”**

Rain does not fall the same on all. Certainly not in this time of year. This list averaged 1.72”, while our own stations average 2.54”, which is drier than our normal of around 4”.

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

Location	Station ID	Aug 2020 Precip	Aug departure from normal	June-July-Aug Precip	3 month departure from normal	Mar-Aug Precip	6 month departure from normal	Sep-Aug Precip	12 month departure from normal
White Plains NY	HPN	3.30"	-0.86"	10.79"	-1.33"	20.98"	-4.18"	42.10"	-7.25"
Danbury CT	DXR	3.94"	-0.60"	11.91"	-1.69"	21.48"	-4.90"	41.78"	-8.09"
New Haven CT	HVN	2.37"	-1.58"	7.80"	-4.18"	18.42"	-6.46"	38.68"	-8.43"
Meriden CT	MMK	2.78"	-1.17"	7.97"	-4.01"	22.45"	-2.43"	48.75"	1.64"
Hartford CT	HFD	1.90"	-1.76"	6.92"	-4.73"	17.41"	-5.58"	36.20"	-7.40"
Willimantic CT	IJD	0.55"	-3.48"	7.65"	-4.52"	19.53"	-5.48"	39.40"	-9.02"
New London CT	GON	1.22"	-2.94"	4.75"	-7.29"	16.29"	-8.17"	37.83"	-8.66"
Westerly RI	WST	1.25"	-2.90"	5.61"	-6.01"	16.33"	-8.55"	38.01"	-9.38"
Newport RI	UUU	1.22"	-2.48"	4.88"	-6.09"	16.45"	-7.11"	35.29"	-11.04"
New Bedford MA	EWB	0.44"	-3.63"	4.19"	-7.15"	10.89"	-13.52"	27.35"	-21.01"
Hyannis MA	HYA	0.88"	-2.75"	3.29"	-7.13"	13.98"	-9.42"	41.04"	-6.65"
Nantucket MA	ACK	1.63"	-2.28"	3.18"	-7.31"	14.25"	-7.65"	39.95"	-4.47"
Marthas Vineyard MA	MVY	0.82"	-3.16"	3.10"	-7.11"	16.54"	-5.40"	42.29"	-2.87"
Taunton MA	TAN	1.63"	-2.45"	7.49"	-3.97"	19.25"	-5.52"	42.49"	-7.25"
Plymouth MA	PYM	1.59"	-2.20"	5.44"	-5.79"	18.94"	-5.87"	47.60"	-1.55"
Norwood MA	OWD	3.88"	0.01"	12.24"	0.64"	26.17"	2.25"	46.23"	-0.83"
Bedford MA	BED	1.77"	-1.88"	5.95"	-5.34"	15.25"	-8.23"	34.05"	-11.66"
Beverly MA	BVY	m	#VALUE!	#VALUE!	-8.40"	14.52"	-9.09"	35.14"	-11.04"
Lawrence MA	LWM	2.24"	-1.18"	8.64"	-2.52"	19.22"	-3.64"	39.57"	-3.59"
Fitchburg MA	FIT	1.15"	-2.65"	6.02"	-6.11"	16.61"	-8.08"	28.73"	-18.41"
Orange MA	ORE	1.54"	-2.01"	7.22"	-4.89"	17.48"	-5.27"	37.02"	-5.53"
Westfield MA	BAF	2.64"	-1.52"	6.46"	-6.14"	16.83"	-8.68"	38.11"	-10.28"
North Adams MA	AQW	3.67"	-0.52"	8.44"	-5.26"	16.22"	-8.97"	34.49"	-12.12"
Pittsfield MA	PSF	2.79"	-1.30"	9.64"	-3.10"	18.55"	-5.63"	43.28"	-2.10"



## **Rulers of the Snow**

We are the Rulers of the Snow. We define where the snow is and where it is not.

This is the group of 72 stations that reported snow fall and snow depth for all days in August 2020.

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

Station	Name	Aug 2020 Snowfall	Station	Name	Aug 2020 Snowfall
MA-BE-21	Cheshire 0.5 NNW	0.0"	RI-KN-14	Greene 1.4 E	0.0"
CT-LT-15	Colebrook 1.0 NE	0.0"	RI-KN-2	East Greenwich 2.3 ESE	0.0"
CT-LT-34	Woodbury Center 1.5 SSW	0.0"	RI-WS-37	Kingston 2.4 SW	0.0"
CT-FR-3	New Canaan 1.9 ENE	0.0"	RI-WS-42	Richmond 4.6 NNE	0.0"
CT-FR-9	Brookfield 3.3 SSE	0.0"	RI-WS-47	Westerly 0.8 WNW	0.0"
CT-NH-43	Wallingford Center 3.3 NNW	0.0"	RI-WS-55	Wakefield 0.8 ENE	0.0"
CT-NH-57	New Haven 2.9 NNW	0.0"	MA-BR-55	NWS Boston/Norton 2.5 ESE	0.0"
MA-FR-10	Conway 0.9 SW	0.0"	MA-BR-61	Mansfield 2.4 ENE	0.0"
MA-FR-12	Sunderland 1.3 SE	0.0"	MA-MD-115	Hudson 1.4 NW	0.0"
MA-FR-13	Conway 2.9 NW	0.0"	MA-MD-119	Watertown 1.1 W	0.0"
MA-FR-17	Buckland 1.8 ESE	0.0"	MA-MD-12	Acton 1.3 SW	0.0"
MA-FR-31	Colrain 3.7 WNW	0.0"	MA-MD-125	Tewksbury 3.6 SSE	0.0"
MA-HD-25	Ludlow 2.3 SW	0.0"	MA-MD-126	Melrose 0.5 NE	0.0"
MA-HD-30	Hampden 2.0 NW	0.0"	MA-MD-156	Marlborough 2.8 ENE	0.0"
CT-HR-22	East Hartford 1.3 E	0.0"	MA-MD-44	Medford 1.2 W	0.0"
CT-HR-57	Suffield Depot 3.3 NNE	0.0"	MA-MD-51	Maynard 0.7 ESE	0.0"
CT-HR-65	Newington 1.9 SSW	0.0"	MA-MD-55	Holliston 0.7 W	0.0"
CT-TL-18	Hebron 5.3 NW	0.0"	MA-MD-7	Winchester 0.7 SE	0.0"
CT-TL-2	Staffordville 0.4 NNW	0.0"	MA-MD-85	Wilmington 2.2 WNW	0.0"
CT-TL-27	Willington 2.7 SE	0.0"	MA-ES-12	Boxford 2.4 S	0.0"
CT-TL-35	Somersville 0.2 ENE	0.0"	MA-ES-4	Groveland 0.5 WSW	0.0"
CT-MD-21	Killingworth 2.6 ESE	0.0"	MA-ES-41	Danvers 0.8 ESE	0.0"
MA-WR-54	Barre 1.4 NNE	0.0"	MA-ES-48	Andover 0.6 E	0.0"
MA-WR-75	Warren 2.4 WSW	0.0"	MA-NF-1	Norwood 1.3 NW	0.0"
CT-NL-10	Norwich 2.5 NNE	0.0"	MA-NF-11	Millis 2.0 SW	0.0"

CT-NL-19	Mystic 0.9 W	0.0"	MA-NF-54	Quincy 1.2 W	0.0"
CT-NL-29	East Lyme 0.5 SW	0.0"	MA-NF-58	Plainville 0.6 NNW	0.0"
CT-NL-32	Niantic 1.1 SW	0.0"	MA-BA-12	Orleans 1.1 E	0.0"
CT-NL-40	Pawcatuck 1.8 SSE	0.0"	MA-BA-2	Falmouth 3.1 NNW	0.0"
CT-NL-46	Mystic 3.4 NW	0.0"	MA-BA-3	Falmouth 3.0 E	0.0"
CT-NL-6	New London 1.0 NNW	0.0"	MA-BA-47	Mashpee 2.4 WSW	0.0"
RI-PR-28	North Smithfield 0.7 SE	0.0"	MA-BA-50	Falmouth 5.4 NNE	0.0"
RI-PR-33	Greenville 0.7 NNW	0.0"	MA-BA-57	Falmouth 5.7 N	0.0"
RI-PR-45	Manville 0.4 WSW	0.0"	MA-BA-72	Yarmouth 2.0 S	0.0"
RI-PR-51	North Smithfield 0.6 S	0.0"	MA-BA-76	Barnstable 0.7 NE	0.0"
RI-PR-82	Providence 1.6 NNW	0.0"	NY-SF-114	Fishers Island 0.5 NE	0.0"

August 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.

397 Reports per Day was our record reporting average for August. More and more days of over 400 Daily Reports. 426 Daily Reports for August 18<sup>th</sup> is a single day reporting record for us.

August 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						392 <sup>1</sup>
381 <sup>2</sup>	395 <sup>3</sup>	402 <sup>4</sup>	403 <sup>5</sup>	383 <sup>6</sup>	387 <sup>7</sup>	382 <sup>8</sup>
386 <sup>9</sup>	388 <sup>10</sup>	395 <sup>11</sup>	401 <sup>12</sup>	398 <sup>13</sup>	394 <sup>14</sup>	388 <sup>15</sup>
393 <sup>16</sup>	416 <sup>17</sup>	426 <sup>18</sup>	381 <sup>19</sup>	403 <sup>20</sup>	387 <sup>21</sup>	381 <sup>22</sup>
399 <sup>23</sup>	399 <sup>24</sup>	392 <sup>25</sup>	403 <sup>26</sup>	398 <sup>27</sup>	424 <sup>28</sup>	407 <sup>29</sup>
418 <sup>30</sup>	395 <sup>31</sup>					

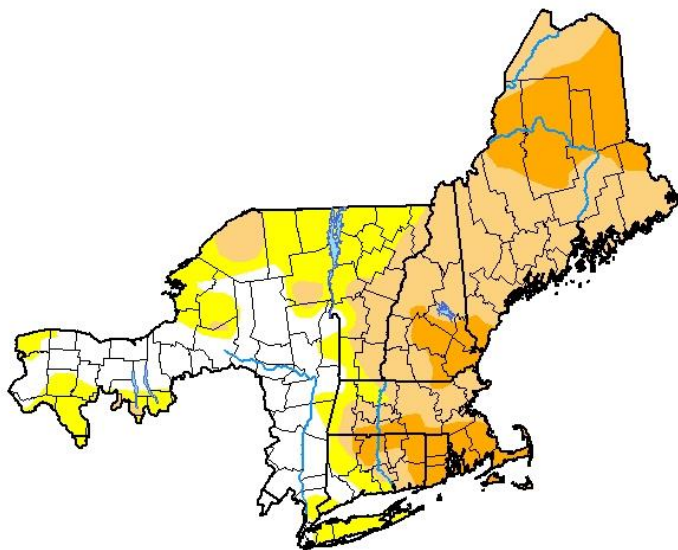
You can tell where Isaias dropped its rain in New York. D1 and D2 conditions are getting more apparent in Maine and Rhode Island.

Keep monitoring and reporting Conditions where you are.

Every drop counts and zeros do too!

## U.S. Drought Monitor Northeast RFC

**September 8, 2020**  
(Released Thursday, Sep. 10, 2020)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
<b>Current</b>	21.76	20.62	37.92	19.69	0.00	0.00
<b>Last Week</b> <i>09-01-2020</i>	21.76	27.74	32.31	18.19	0.00	0.00
<b>3 Months Ago</b> <i>06-09-2020</i>	44.66	55.34	0.00	0.00	0.00	0.00
<b>Start of Calendar Year</b> <i>12-31-2019</i>	100.00	0.00	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> <i>10-01-2019</i>	66.91	33.09	0.00	0.00	0.00	0.00
<b>One Year Ago</b> <i>09-10-2019</i>	90.94	9.06	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:*

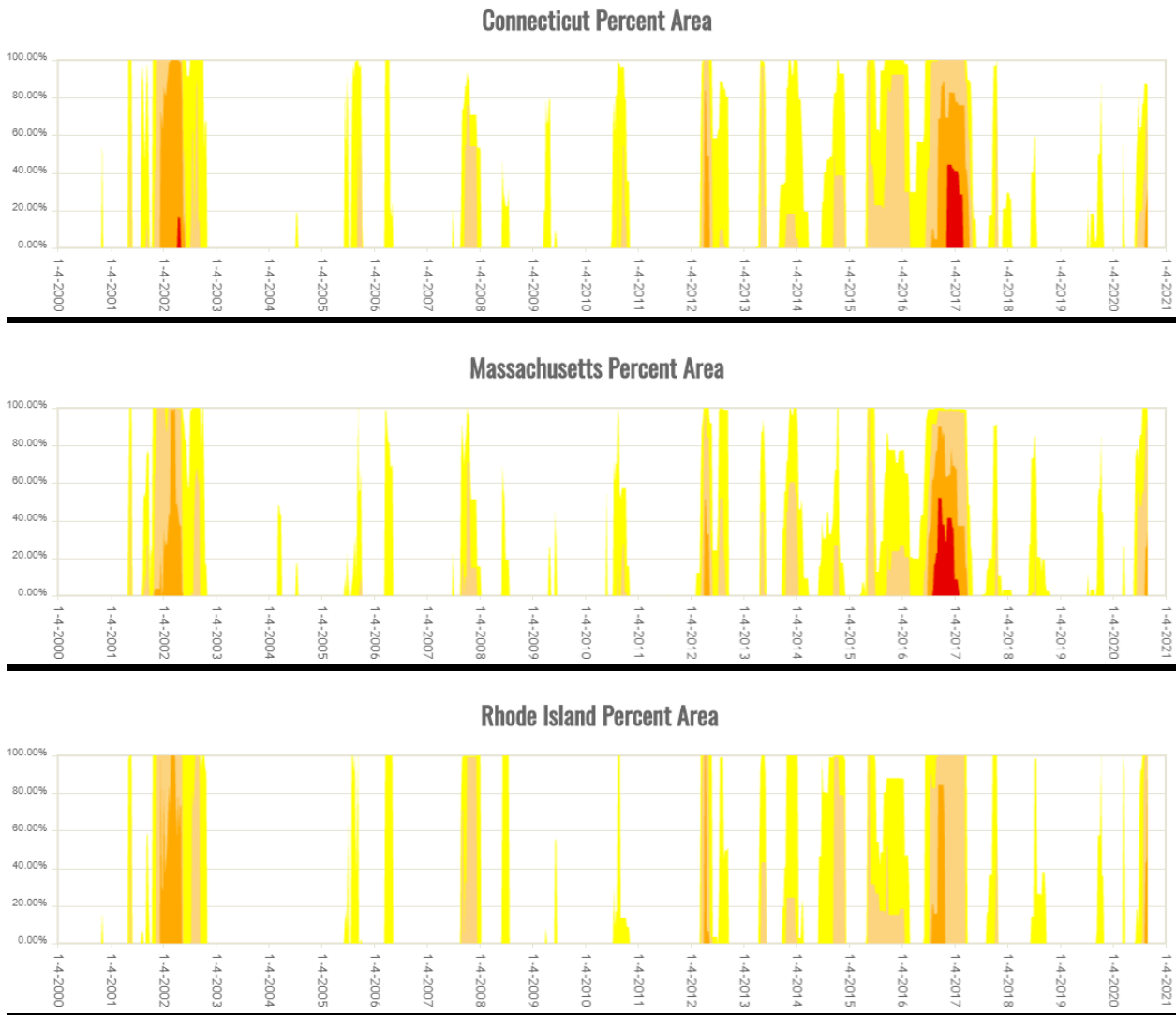
Richard Tinker  
CPC/NOAA/NWS/NCEP



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

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

But wait! There's more! From the Drought Monitor, a time series for the past 20 years with Year 2020, to the right, not yet complete.



See how dry (yellow) and drought (shades of tan and red) come and go. It has become difficult to remember the wet years of Year 2011 and Year 2018.

From the [Drought Monitor](#) site, the link is under “Data” followed by “Time Series”. “States” is one of many selections available. If you know your watershed address, you can select that too.

## **Wrap up**

If it's (a tropical cyclone) in the Bahamas, it's your business! Make it your business to keep informed and be prepared to act as this active hurricane season continues.

The Autumnal Equinox comes at 9:31AM EDT on September 22<sup>rd</sup>. We reach the midpoint of daylight and darkness. Early morning darkness and early evening darkness will soon follow.

We prompt you almost every month to fill in missing reports. We prompt you once a year as well. The true payoff for a complete reporting record comes soon when we end the Water Year on September 30<sup>th</sup>, and [Water Year Summaries](#) will appear afterwards. Anytime in September or October is a good time to look over your station reporting and fill in missing reports where you can accurately do so.

Starting October 1, not only a new Water Year begins, but also a new snow fall reporting season begins. We have had snow in October before. Please take the opportunity to report snow fall and snow depth with every report. When the snowflakes do begin to fall, slow down and report the accurate amount.

Our next Weather Talk Webinar is scheduled for September 30<sup>th</sup>. “**NOAA Weather Radio.**” My 40+ year accompaniment that's always been there!! In the days before cable TV, The Weather Channel, and all of this internet access, mobile devices and radar apps, there has been NOAA Weather Radio, broadcasting weather information and forecasts 24 hours-a-day, now with text to voice capabilities. Ask a Coordinator, if you want more.

Another webinar follows on October 15<sup>th</sup>, titled ***Awesome or Awful? Ranking Winter Severity with the Accumulated Winter Season Severity Index (AWSSI).***

All of these [WxTalk Webinars](#) are archived, so take the time and learn something you never knew about.

Thank you for all that you do for CoCoRaHS, whether in the past, present and in the days to come.