Community Collaborative Rain, Hail & Snow Network



June 2018

Celebrate! Our citizen-science network is 20 years active. What started as the Colorado Collaborative Rain Hail Study spread nationwide, and to neighboring Canada and The Bahamas. A network of volunteer observers that started around Fort Collins Colorado has grown to over 16,000 reporting observers, submitting over 11,000 reports each day, 4 million reports each year, and the database has grown to over 40 million total precipitation reports, the largest of its kind ever built.

Celebrate! May ended quietly with zeros reported accompanied with a smash of reporting records. Rhode Island and Connecticut broke single month reporting records, and grouped together with Massachusetts, we smashed a single month reporting record of our own.

Celebrate! We have observers who made the Grand List. Those that signed up 3 years ago are coming to their first 1000 Daily Reports. We look forward to seeing more on the Grand List in the months to come.

Celebrate! Our anniversary series concludes with a look at Connecticut. We started this celebration 2 months ago with Rhode Island, last month with Massachusetts and conclude with Connecticut.

We are celebrating! 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.

3000 Daily Reports

MA-BR-2 Rehoboth 2.1 N

1000 Daily Reports

MA-SF-10	Chelsea 0.8 N
CT-FR-25	Norwalk 2.9 NNW
MA-BA-45	Sandwich 0.9 NNE
MA-WR-30	Shrewsbury 1.6 NNE
MA-BR-19	Somerset 2.0 NNE
MA-MD-52	Lexington 0.6 SW

Rain or Snow at Obs Time

An occurrence that doesn't happen that often. About 2 times a month, we go to take our morning observation (obs) and it is raining or snowing at that time. What's the best practice to report it?

The National Weather Service has a tool that will take in your Daily Reports. We have seen the results of that tool when they create a Public Information Statement (PNS) and place that Statement on the office website. We have seen those Statements in the past, most times for an overnight precip event, the long list by County and amount and "COCORAHS" stated.

The same tool can create Statements that spans multiple days, such as what occurs on those 2 times a month when it is actively raining/snowing during your morning observation.

One key requirement, however. You need to submit Daily Reports for **both** observations. One for the Daily Report for the time that it was raining/snowing, and another Daily Report for the next day, reporting the additional amount that fell after the initial observation.

Having only 1 Daily Report submitted, does stand out like a sore thumb, an inaccurate total, actually, an incomplete total.

Checklist

- ✓ Be safe. None of this is worth getting hurt for. If you need to, wait until the ice melts, wind subsides, or the lightning bolts stop.
- ✓ Change your observation time to if you do elect to wait out the
 weather or get an early start before conditions worsen. Be accurate,
 reporting the time that you measure when it is raining/snowing at
 observation time.
- ✓ Make <u>both</u> Daily Reports. Do not miss a day. The National Weather Service is taking in your reports, and they would like to be able to create a storm total from your reports.
- ✓ Comments that verify and clarify your reported precipitation, helps the rest of know that your report is indeed accurate. And typing "rain (snow) at obs time", will enable you to count how many times this does occur. Twice a month? You can tell.

Multi-Day Reporting

After going through May's reporting, and seeing the calendar ahead of us, the 4th of July coming on a Wednesday, take this time to mention some finer points of Multi-Day Reporting.

- ✓ Start the Multi-Day Report for the next day. Last Daily Report on July 3rd. First day of the Multi-Day Report is July 4th.
- ✓ Resume Daily Reporting the next day. Last Day of the Multi-Day report is dated July 8th. The next Daily Report is dated July 9th.
- ✓ Have every day accounted for. Check your reports with the "<u>Station Precip Summary</u>" link.
- ✓ Ask a Coordinator for help or for a 2nd set of eyes.

We Dare to Compare

We strive to have an observer in every town. We strive to have more observers than the year before. As we go along that path, we look at our own group of observers, look at the reporting and ... we dare to compare.

New York has been a state we have looked at in the past. As we grow, we see New York take another jump. In 2016, an increase in Long Island. In 2017, increases in the Buffalo and Albany area. In October 2017, we looked at New York and saw...

	Southern		
	New New		
	England	York	
Observers Reporting	332	377	
Precip Reports	<mark>8,016</mark>	<mark>9,439</mark>	
Zero Reports	4,664	5,007	
Non-Zero Reports	3,352	4,432	

Reporting takes a downturn in the winter time. As we come out of winter, start recruiting in March and April, reporting picks up in April, and then again in May, we saw that our reporting and New York's was very close. Really close. The table on the next page to shows the results for May 2018.

	Southern		
	New		
	England	New York	Georgia
Observers Reporting	348	355	371
Reported all 31 days	<mark>177</mark>	<mark>144</mark>	<mark>140</mark>
Completed by Multi-Day	<mark>66</mark>	<mark>44</mark>	<mark>49</mark>
Missing 1 or 2 reports	<mark>17</mark>	<mark>48</mark>	<mark>54</mark>
Reports / Reporting			
Observer	<mark>25.1</mark>	24.5	23.4
Precip Reports	8,729	8,713	8,688
<mark>Zero Reports</mark>	<mark>4,659</mark>	<mark>4,420</mark>	<mark>4,248</mark>
Non-Zero Reports	4,070	4,293	4,440
Comments	1,449	1,675	775
Multi-Day Reports	205	183	198
Condition Monitoring	28	28	21
Significant Weather	11	11	18
Hail Reports	3	4	1
Snow Fall Reports	<mark>4,592</mark>	4,114	3,318
Snow Depth Reports	<mark>2,383</mark>	1,220	159

One key is within Recruiting. Since November, we were able to signup more observers than New York (132 to 90) and get more of them to report (62 to 36), to offset what are normal expected losses.

The next key is you! You place an emphasis on reporting, reporting zeros, and not missing reports. Less than 10% of the observers missed 1 or 2 reports. This is a remarkable achievement, surpassing the reporting totals of a larger state, with fewer reporting observers.

Wow! What an extraordinary effort by many!

Thank you.

Anniversary Celebration



As our network celebrates 20 years on June 17, you will probably see some dizzying statistics about months and years of service and total reports, somewhere on a "Message of the Day". Observers from Colorado and New Mexico and Wyoming with 15 to 20 years of

service and over 5000, 6000, and a few over 7000 Daily Reports. If it all looks like something that you would see or read in this Monthly Newsletter, you might be right about where all those statistics came from. This section is my anniversary message to you.

A special anniversary thanks to the observers who have been in our network for 10 years, RI-WS-1, RI-KN-2, RI-NW-4, RI-NW-5. You were the first to join in New England, and as the surrounding states filled in, day by day, you stuck with it. You defined the flooding rains, deep snows, droughts, and storms of all sizes and names. Your 3000+ Daily Reports will help define our climate. A Significant Weather Report from RI-WS-1 on a Wednesday afternoon in July 2008 convinced a Forecast Office and is still looked at and mentioned this year.

To any observer who ever reported "zero", thank you. You have performed the most counterintuitive aspect of our network. We recruit volunteers to report precipitation and then we ask those same volunteers to report zeros when there is nothing to measure. You are the heroes of CoCoRaHS. There is a high value of you stating "no precipitation" or "no new snow" or "no snow depth" here, and you do that with every zero reported.

To those that make Significant Weather and Hail Reports, thank you. Those reports serve as an immediate real-time call to see what is happening now, proving or disproving what all the high-tech equipment says, and potentially saving life and property.

To the unique group of observers that are called "The Rulers of the Snow", thank you. You do something that no machine or automated piece of equipment could possibly do. With measurements of snow depth and its water equivalent, satellites or overflying aircraft can't completely tell what you tell, and many listen to what your measurements of snow, and its water equivalent, say.

To those that make well written Comments, thank you. Those Comments that clarify and verify in words what occurred when the rest of us are surprised at or interested to learn more about the amount reported.

To those that submit Condition Monitoring Reports, thank you. A new dimension to our participation, we help define where conditions are wet, dry or just normal, while putting every aspect of the ground into our statements of ground truth. A weekly statement that is made across our continent about drought conditions does take your input into consideration.

To this group of 348 reporting observers, thank you. You submitted more Daily Reports than our larger and neighboring state to the west, the State of New York, that had 7 more reporting observers... including the observer on Fishers Island! More Daily Reports than the State of Georgia with 23 more reporting observers. These past two weeks have been special, watching the reporting grow, seeing new observers start, and watching some of you fill in a missing report here and there. The margin was not that large, so every report mattered in the end. You did something extraordinary, surpassing the reporting totals of a larger state. You did so by reporting zeros, by looking at your own station reporting, and by filling in a missing report where needed.

348 observers who have submitted over 304,000 Daily Reports, with an average of 3 years participating in the network. But who's counting?

Congratulations! Celebrate!

Storms of May 15, 2018



FROM STORM PREDICTION CENTER

The Storm Prediction Center in Norman Oklahoma (http://www.spc.noaa.gov/) does provide outlooks for possible severe weather, every day.

In the days leading up to May 15, they were well aware of the potential for widespread severe weather in the Northeast.
Watches were issued early in the afternoon prior to storm development. Warnings for impending severe weather were issued by NWS offices more than 30 minutes on average before the storms struck.

Updated Confirmed Tornadoes – May 15, 2018

Tornado Rating	Path Length	Track	Counties	
EF-2	1.14 miles	Kent NY	Putnam NY	
EF-1	9.5 miles	Beacon Falls CT to Hamden CT	New Haven CT	
EF-1	About 5 miles	East of Woodstock NY to southern part of Saugerties NY to Tivoli NY	Ulster & Dutchess NY	
EF-1	4.2 miles	Southbury CT to Oxford CT	New Haven CT	
EF-1	0.7 mile	Winsted CT	Litchfield CT	
EF-1	0.21 mile	Canaan Township PA - 2 miles east of Waymart PA to 2 miles west of Prompton PA	Wayne PA	
EF-1	0.1 mile	Near Patterson NY	Putnam NY	
EF-0	0.62 mile	Newburgh NY	Orange NY	
EF-U	N/A	Video of tornado over Barkhamsted Reservoir No actual damage found	Litchfield CT	

Watching storms on radar is one thing most of us like to do, as weather enthusiasts. Unfortunately, there were two fatalities that day. We've included a list of the eight confirmed tornadoes and significant damage reports from NWS storm surveys.

Event Type	Wind Speeds	Damage Swath	Location	Counties
Microburst	115 mph	1 mile wide 6 miles long	1 mile southwest of Calkins PA to 3 miles south-southeast of Milanville PA	Wayne PA
Macroburst	110 mph	3 ml wide 9 ml long	New Fairfield to Brookfield CT	Fairfield CT
Microburst	110 mph	1.25 miles wide 8 miles long	Waymart PA to Honesdale PA	Wayne PA
Macroburst	85-105 mph	3 ml wide 8 mi long	Between Beacon/Wappingers Falls NY and East Fishkill/Hopewell Junction NY	Dutchesi NY
Multiple Downbursts	90-100 mph	Across a wide area	Central Elk Co. especially south and east of St. Mary's to near Driftwood and into northern Clinton Co.	Elk, Cameron, and Clinton PA
Downburst	95 mph	Around 16 miles long	Narrowsburg NY to Eldred NY to Forestburgh NY	Sullivan NY

Event Type	Wind Speeds	Damage 5wath	Location	Counties
Downburst	80-100 mph	1.25 mi wide 9.3 mi long	Wingett Run OH to New Matamoras OH	Washington O
Microburst	85-95 mph	Localized	East of Mount Holly Springs PA	Cumberland PA
Macroburst	80-90 mph	3 mi wide 4 mi long	Terry Hill area near Kent NY	Putnack NY.
Microburst	80 mph	0.5 mile	Near North Salem NY	Westchester N
Microborst	75:85 mph	N/A	Near Marysville PA	Perry PA
Straight Line Winds	70-90 mph	N/A	Orangeville PA	Columbia PA
Straight Line Winds	70-90 mph	N/A	Danville and Riverside PA	Northumberland & Mortour PA
Straight Line Winds	65-75 mph	N/A	Mount Holly Springs PA to near Boiling Springs PA and Carlisle PA	Cumberland PA

FROM NWS EASTERN REGION

It's different when the storm damages a home that you've been in, someone you know.

Several of our observers in Connecticut were directly affected by these storms, either by tree damage or power outages that lasted for a few days.

Listed on the next 6 pages are some of the Significant Weather Reports and Hail Reports submitted by you to our NWS offices. Lat/Long redacted by the Editor. All of these reports,



DAMAGE IN NORTHERN BROOKFIELD CT

whether severe or not, greatly assist the forecasters by providing them with instant reports of what's happening at ground level, something that radar cannot do!

Please continue to send these real-time reports, as long as it safe to do so!

Leading off this series of reports. Submitted on 4:21pm.

Significant Weather Report

Station Number: CT-HR-8

Station Name: North Granby 1.3 ENE

5/15/2018 4:15 PM Date: Submitted 5/15/2018 4:21 PM

1/2" hail Notes:

Taken at Registered Location: True

Precip Duration Minutes:

New Precip Amount: 0.78 in.

Total Precip Amount: NA New Snow Depth: NA Total Snow Depth: NA

Flooding: No

Received at 152024. 15th of the month. 20:24Z 4:24pm local time.

NZUS45 KBOU 152024 CCRAHS

intense rain report from CoCoRAHS spotter:

05/15/2018 04:15 PM local time

County: Hartford CT

North Granby 1.3 ENE (number CT-HR-8)

Latitude:

Longitude:

NA inches so far, with 0.78 inches in the past 0 mins

Flooding: No

Comments: 1/2" hail

Received NWS Boulder Tue May 15 14:24:01 2018 MDT

Sent to WFOs: BOX, ALY, OKX

All of today's CoCoRAHS observations are in WRKCCR (Boulder and Pueblo only)

Or at http://www.cocorahs.org (click on reports)

Hail Report. Submitted at 4:24pm

Hail Report		
Hail Report Information		
Station Number:	CT-HR-8	
Station Name:	North Granby 1.3 ENE	NO HAIL PAD
Date:	5/15/2018 4:00 PM	IMAGE
Submitted	5/15/2018 4:24 PM	
Taken at registered location:	True	
Notes:		
Hailstone Information		
Largest Size:	1/2" Grape	
Average Size:	3/8"	
Smallest Size:	1/4" Pea Size	
Stone Consistency:	Mixed	
Hail Storm Information		
Duration Minutes:	20	
Duration Accuracy:		
Timing:	Intermittent	
More Rain than Hail:	True	
Hail Started:	After rain	
Largest Hail Started:	After smaller hail	
Damage:	minor leaf damage	

Received at 4:26pm

NZUS45 KBOU 152026 CCRAHS

detailed hail report from CoCoRAHS spotter:

05/15/2018 04:00 PM local time

County: Hartford CT

North Granby 1.3 ENE (number CT-HR-8)

Latitude:

Longitude:

Largest hail: 0.500 average: 0.375

Damage: minor leaf damage Duration: 20 depth:

Comments:

Received NWS Boulder Tue May 15 14:26:56 2018 MDT

Sent to WFOs: BOX, ALY, OKX

Hail Report. Submitted at 5:12pm

Hail Report		
Hail Report Information		
Station Number:	CT-LT-22	
Station Name:	New Milford 5.3 SSW	NO HAIL PAD
Date:	5/15/2018 4:49 PM	IMAGE
Submitted	5/15/2018 5:12 PM	
Taken at registered location:	True	
Notes:		
Hailstone Information		
Largest Size:	3/8"	
Average Size:	3/8"	
Smallest Size:	1/4" Pea Size	
Stone Consistency:	Hard, White Ice	
Hail Storm Information		
Duration Minutes:	2	
Duration Accuracy:	2min	
Timing:	Continuous	
More Rain than Hail:	True	
Hail Started:	After rain	
Largest Hail Started:	Before smaller hail	
Damage:		

Received at 5:14pm

NZUS45 KBOU 152114

CCRAHS

detailed hail report from CoCoRAHS spotter:

05/15/2018 04:49 PM local time

County: Litchfield CT

New Milford 5.3 SSW (number CT-LT-22)

Latitude:

Longitude:

Largest hail: 0.375 average: 0.375

Damage:

Duration: 2 depth:

Comments:

Received NWS Boulder Tue May 15 15:14:54 2018 MDT

Sent to WFOs: ALY, BOX, OKX

Hail Report. Submitted at 5:22pm

Hail Report		
Hail Report Information		
Station Number:	CT-LT-24	
Station Name:	Salisbury 3.8 NE	NO HAIL PAD
Date:	5/15/2018 3:15 PM	IMAGE
Submitted	5/15/2018 5:22 PM	
Taken at registered location:	True	
Notes:	1-2cm	
Hailstone Information		
Largest Size:	1/2" Grape	
Average Size:	3/8"	
Smallest Size:	1/4" Pea Size	
Stone Consistency:	Hard, Clear Ice	
Hail Storm Information		
Duration Minutes:	5	
Duration Accuracy:	10min	
Timing:	Intermittent	
More Rain than Hail:	True	
Hail Started:		
Largest Hail Started:		
Damage:	minor leaf damage.shredd	ed leaves

Received at 5:23PM

NZUS45 KBOU 152123 CCRAHS

detailed hail report from CoCoRAHS spotter:

05/15/2018 03:15 PM local time

County: Litchfield CT

Salisbury 3.8 NE (number CT-LT-24)

Latitude:

Longitude:

Largest hail: 0.500 average: 0.375 Damage: minor leaf damage.shredded leaves

Duration: 5 depth:

Comments: 1-2cmhail startedLargest hail startedanglenum_stonesdistancedepth

Received NWS Boulder Tue May 15 15:23:39 2018 MDT

Sent to WFOs: ALY, BOX, OKX

1" of rain in about 1 hour. Submitted at 6:07PM

Significant Weather Report

Station Number: MA-MD-74

Station Name: Somerville 0.7 SSE Date: 5/15/2018 6:05 PM

5/15/2018 6:07 PM

Notes: A thunderstorm starting about 5 or 5:30PM has dropped just over 1" of rain by 6:10.

There have been a couple intense cloudbursts, with lighter rain in between.

Taken at

Submitted

Registered True

Location:

Precip Duration 60

Minutes:

New Precip Amount: 1.00 in.

Total Precip Amount: 1.00 in.

New Snow NA

Depth:

Total Snow NA Depth:

Flooding:

Received within 1 minute, 6:07PM

NZUS45 KBOU 152207 CCRAHS

intense rain report from CoCoRAHS spotter:

05/15/2018 06:05 PM local time

County: Middlesex MA

Somerville 0.7 SSE (number MA-MD-74)

Latitude: Longitude:

1.00 inches so far, with 1.00 inches in the past 60 mins

Flooding:

Comments: A thunderstorm starting about 5 or 5:30PM has dropped just

over 1" of rain by 6:10. There have been a couple intense

cloudbursts, with lighter rain in between

Received NWS Boulder Tue May 15 16:07:55 2018 MDT

Sent to WFOs: BOX

Significant Weather Report. Submitted on 6:24PM

View Data: View Significant Weather Report US Units •

Significant Weather Report

Station Number: RI-PR-55

Station Name: Cumberland Hill 3.3 NE

Date: 5/15/2018 6:22 PM Submitted 5/15/2018 6:24 PM

Still raining, but not as heavily Notes:

Taken at Registered Location: True **Precip Duration Minutes:** 20

New Precip Amount: 0.80 in.

Total Precip Amount: NA New Snow Depth: NA Total Snow Depth: NA Flooding: Minor

And received by the National Weather Service at 6:25PM.

NZUS45 KBOU 152225 CCRAHS

intense rain report from CoCoRAHS spotter:

05/15/2018 06:22 PM local time

County: Providence RI

Cumberland Hill 3.3 NE (number RI-PR-55)

Latitude:

Longitude:

NA inches so far, with 0.80 inches in the past 20 mins

Flooding: Minor

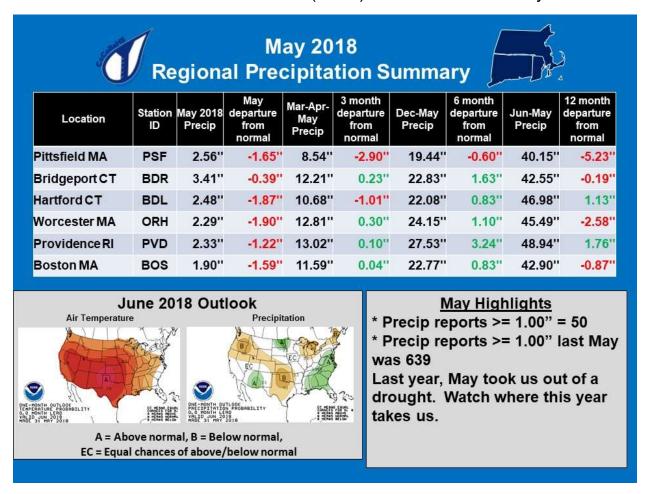
Comments: Still raining, but not as heavily

Received NWS Boulder Tue May 15 16:25:18 2018 MDT

Sent to WFOs: BOX

Detail and Summary for May 2018

From the National Weather Service (NWS) Climate sites for May 2018.



The red ink is back for May. Zeros ruled the month. Spring rains came during the first two weeks of the month, with light rains on the 3rd and the 6th. Our first thunderstorm on the 10th. Rain on the 12th. Significant wind event on the 15th, with a few small tornadoes in CT. A narrow band of 2" precip noted by the map on the next page. Over 1.5" rain in the southern half with three rains that week, on the 15th, 16th and 19th. Rain heaviest around New London on the 22nd. Memorial Day weekend was cloudy, cool, rain to the northeast of our area. The month ended quietly with zeros reported, but noisily with records being broken!

Take in this next section of your reports with appreciation of your efforts.

From your reports for May 2018

Observers reporting 348

Reported all 31 days 177

Completed by Multi-Day Reports 66

Missing 1 or 2 reports 17

Daily Reports 8729

Zero Reports 4659

Non-Zero Reports 4070

Daily Comments 1449

Multi-Day Reports 205

Condition Monitoring Reports 28

Significant Weather Reports 11

Hail Reports 3

Snowfall Reports 4592

Snow Depth Reports 2383

Highest Daily Report 2.05" from Colebrook CT (CT-LT-15) reported on 5/16 Daily Precipitation Ending 8AM May 16, 2018 Zero 0.75 **Northeast River Forecast Center** 7+ inches

Astounding! Thank you filling in missing reports. With a collaborative effort, enjoy the variability that is within this record list of 243 stations, that covers nearly 7 pages.

Keep up the great work. Focus on not missing reports. Keep checking "Station Precip Summary" and continue to do so for many months to come.

For a viewing explanation on Watersheds, the CoCoRaHS animated video is on YouTube.

Watershed	Watershed Name	Station	Station Name	Precip
01070004	Nashua			
0107000401	North Nashua River	MA-WR-44	Westminster 0.6 WSW	2.07"
0107000401	North Nashua River	MA-WR-52	Fitchburg 2.3 N	1.81"
0107000401	North Nashua River	MA-WR-22	Fitchburg 2.0 NNE	2.28"
0107000402	Headwaters Nashua River	MA-WR-56	Sterling 4.3 NW	2.22"
0107000402	Headwaters Nashua River	MA-MD-25	Ayer 0.1 SW	2.39"
0107000403	Squannacook River	MA-MD-47	West Townsend 0.5 W	1.67''
0107000403	Squannacook River	MA-MD-36	Townsend 2.6 S	1.78"
01070005	Concord			
0107000501	Sudbury River	MA-MD-89	Sudbury 3.6 W	2.59"
0107000501	Sudbury River	MA-MD-100	Sudbury 1.6 N	2.47"
0107000501	Sudbury River	MA-MD-88	Wayland 2.1 SSE	2.61"
0107000502	Concord River	MA-WR-28	Berlin 1.3 WSW	2.81"
0107000502	Concord River	MA-WR-18	Northborough 0.6 SSE	2.41"
0107000502	Concord River	MA-WR-42	Northborough 2.3 N	2.14"
0107000502	Concord River	MA-MD-115	Hudson 1.4 NW	2.52"
0107000502	Concord River	MA-MD-83	Boxborough 1.4 SSE	1.98"
0107000502	Concord River	MA-MD-12	Acton 1.3 SW	2.45"
0107000502	Concord River	MA-MD-51	Maynard 0.7 ESE	2.27"
0107000502	Concord River	MA-MD-91	Westford 2.8 SSE	2.13"
0107000502	Concord River	MA-MD-62	Chelmsford 1.2 E	2.20"
01070006	Merrimack River			
0107000611	Spicket River	MA-ES-38	Methuen 1.6 NNE	2.04"
0107000612	Stony Brook - Merrimack River	MA-MD-104	Littleton 2.8 NNW	2.05"
0107000612	Stony Brook - Merrimack River	MA-MD-105	Littleton 0.9 WSW	2.39"
0107000612	Stony Brook - Merrimack River	MA-MD-93	Westford 1.5 SSW	2.00"
0107000613	Shawsheen River	MA-MD-52	Lexington 0.6 SW	2.15"
0107000613	Shawsheen River	MA-MD-96	Lexington 0.3 NE	2.08"
0107000614	Powwow River - Merrimack River	MA-ES-20	Haverhill 0.7 N	1.99"
0107000614	Powwow River - Merrimack River	MA-ES-27	Amesbury 1.2 ENE	2.34"
01080201	Middle Connecticut			
0108020106	Manhan River - Connecticut River	MA-HS-8	Williamsburg 1.2 WSW	1.53"

0108020106	Manhan River - Connecticut River	MA-HS-26	Easthampton 0.5 SW	2.40"
0108020106	Manhan River - Connecticut River	MA-FR-12	Sunderland 1.3 SE	1.34"
0108020107	Batchelor Brook - Connecticut River	MA-HD-13	Springfield 4.1 W	2.25"
0108020107	Miller	IVIA IID 13	Springheid 4.1 W	2.23
0108020201	Upper Millers River	NH-CH-20	Rindge 3.2 ESE	1.55"
0108020202	Lower Millers River	MA-WR-40	Gardner 1.4 SSW	2.00"
01080203	Deerfield	1017(001(40	Caraner 1.133V	2.00
0108020305	Lower Deerfield River	MA-FR-17	Buckland 1.8 ESE	2.26"
0108020305	Lower Deerfield River	MA-FR-13	Conway 2.9 NW	1.91"
0108020305	Lower Deerfield River	MA-FR-25	Conway 2.7 NW	1.64"
0108020305	Lower Deerfield River	MA-FR-10	Conway 0.9 SW	1.68"
01080203	Chicopee	IVIA I II 10	Conway 0.5 5VV	1.00
0108020402	Ware River	MA-WR-54	Barre 1.4 NNE	2.42"
0108020404	Chicopee River	MA-HD-25	Ludlow 2.3 SW	2.29"
01080205	Lower Connecticut	IVII/ (TID 23	Eddiow 2.3 3 W	2.23
0108020501	Mill River-Connecticut River	CT-HR-57	Suffield Depot 3.3 NNE	2.76"
0108020501	Mill River - Connecticut River	CT-HR-5	Enfield 1.5 SE	2.99"
0108020502	Scantic River	CT-TL-26	Broad Brook 2.6 ESE	2.28"
0108020502	Scantic River	MA-HD-20	Wilbraham 3.7 SSW	2.24"
0108020502	Scantic River	CT-TL-15	Central Somers 0.3 N	2.90"
0108020503	Park River	CT-HR-39	Farmington 1.6 SW	2.34"
0108020503	Park River	CT-HR-49	West Hartford 1.1 W	2.53"
0108020503	Park River	CT-HR-63	West Hartford 1.1 NNE	2.31"
0108020503	Park River	CT-HR-58	West Hartford 2.1 NNE	2.26"
0108020503	Park River	CT-HR-11	West Hartford 2.7 SSE	2.22"
0108020503	Park River	CT-HR-53	Hartford 2.0 SW	2.14"
0108020504	Hockanum River	CT-HR-52	Central Manchester 0.8 N	1.82"
0108020504	Hockanum River	CT-TL-19	Vernon 2.8 N	1.88''
0108020505	Roaring Brook - Connecticut River	CT-HR-6	Wethersfield 1.2 WSW	1.98"
0108020505	Roaring Brook - Connecticut River	CT-HR-45	Wethersfield 1.9 SSW	2.54"
0108020505	Roaring Brook - Connecticut River	CT-HR-68	Rocky Hill 1.3 E	2.21"
0108020505	Roaring Brook - Connecticut River	CT-HR-22	East Hartford 1.3 E	2.00"
0108020505	Roaring Brook - Connecticut River	CT-HR-7	Central Manchester 2.7 SW	1.92"
0108020506	Mattabesset River	CT-HR-15	Southington 3.0 E	2.78"
0108020506	Mattabesset River	CT-HR-65	Newington 1.9 SSW	2.28"
0108020507	Higganum Creek - Connecticut River	CT-MD-2	Portland 0.9 S	2.70"
0108020507	Higganum Creek - Connecticut River	CT-MD-23	Higganum 0.7 N	2.94"
0108020508	Salmon River	CT-MD-22	East Hampton 2.1 N	2.49"
0108020509	Eightmile River - Connecticut River	CT-MD-19	Ivoryton 0.9 WSW	3.25"
0108020509	Eightmile River - Connecticut River	CT-MD-18	Essex Village 0.9 S	2.91"
01080206	Westfield			
0108020601	Headwaters Westfield River	MA-HS-7	Plainfield 2.2 SW	1.86''

0108020603	Outlet Westfield River	MA-HD-15	Westfield 1.5 SW	2.83"
01080207	Farmington			
0108020701	Still River	CT-LT-15	Colebrook 1.0 NE	3.39''
0108020702	West Branch Farmington River	MA-BE-4	Becket 5.6 SSW	2.59''
0108020702	West Branch Farmington River	CT-LT-18	New Hartford Center 1.5 N	3.43''
0108020704	Headwaters Farmington River	CT-LT-9	New Hartford Center 3.2 SW	3.32"
0108020704	Headwaters Farmington River	CT-HR-70	Canton 1.5 W	2.92"
0108020704	Headwaters Farmington River	CT-HR-71	Bristol 2.7 NNE	2.54''
0108020704	Headwaters Farmington River	CT-HR-28	North Canton 0.8 SSW	3.45"
0108020705	Salmon Brook	CT-HR-60	North Granby 0.7 N	3.03''
0108020705	Salmon Brook	CT-HR-8	North Granby 1.3 ENE	3.03"
01090001	Charles			
0109000101	Plum Island Sound - Frontal Atlantic Ocean	MA-ES-24	Newburyport 0.8 SW	2.23"
0109000102	Ipswich River	MA-MD-85	Wilmington 2.2 WNW	2.20''
0109000102	Ipswich River	MA-MD-45	Wilmington 1.5 NE	1.98''
0109000102	Ipswich River	MA-ES-12	Boxford 2.4 S	2.23"
0109000102	Ipswich River	MA-ES-2	Beverly 2.8 NW	1.90''
0109000103	Essex River - Frontal Atlantic Ocean	MA-ES-41	Danvers 0.8 ESE	1.74"
0109000103	Essex River - Frontal Atlantic Ocean	MA-ES-43	Gloucester 2.1 NW	1.60"
0109000104	Saugus River - Frontal Broad Sound	MA-ES-45	Nahant 0.4 N	2.12"
0109000104	Saugus River - Frontal Broad Sound	MA-ES-8	Marblehead 0.8 SW	2.10''
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-7	Winchester 0.7 SE	2.29''
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-44	Medford 1.2 W	2.23"
0109000105	Mystic River - Frontal Boston Harbor	MA-MD-11	Cambridge 0.9 NNW	2.43"
0109000105	Mystic River - Frontal Boston Harbor	MA-SF-10	Chelsea 0.8 N	2.20''
0109000106	Upper Charles River	MA-WR-1	Milford 2.3 NNW	1.81''
0109000106	Upper Charles River	MA-MD-106	Holliston 2.4 W	1.76''
0109000106	Upper Charles River	MA-MD-55	Holliston 0.7 W	1.67''
0109000106	Upper Charles River	MA-MD-42	Holliston 0.8 S	1.75"
0109000106	Upper Charles River	MA-NF-11	Millis 2.0 SW	1.81''
0109000107	Lower Charles River - Frontal Boston Harbor	MA-MD-80	Lincoln 1.5 SW	2.50"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-NF-35	Wellesley 0.1 W	2.03"
0109000107	Lower Charles River - Frontal Boston Harbor	MA-SF-1	Boston 0.5 WSW	1.71"
0109000108	Neponset River - Frontal Boston Harbor	MA-NF-1	Norwood 1.3 NW	2.02"
0109000108	Neponset River - Frontal Boston Harbor	MA-SF-17	Dorchester 1.8 ENE	2.62"
0109000109	Whitmans Pond - Frontal Boston Harbor	MA-NF-32	Quincy 1.8 WSW	2.36"
0109000109	Whitmans Pond - Frontal Boston Harbor	MA-NF-36	Weymouth 2.7 NNW	1.93"
0109000109	Whitmans Pond - Frontal Boston Harbor	MA-PL-36	Hingham 0.8 ESE	2.64"
01090002	Cape Cod			
0109000201	North River - Frontal Massachusetts Bay	MA-PL-43	Hanson 0.7 NW	2.28''
0109000201	North River - Frontal Massachusetts Bay	MA-PL-5	Kingston 3.3 WNW	2.29''
0109000201	North River - Frontal Massachusetts Bay	MA-PL-30	Duxbury 3.7 W	2.46''

0109000202 Cape Cod					
0109000202	0109000202	Cape Cod	MA-BA-8	Falmouth 1.8 WSW	2.45"
0109000202 Cape Cod MA-BA-13 Falmouth 0.6 NNW 2.37" 0109000202 Cape Cod MA-BA-15 Falmouth 5.4 NNE 2.01" 0109000202 Cape Cod MA-BA-17 East Falmouth 1.2 NNW 1.90" 0109000202 Cape Cod MA-BA-19 East Falmouth 0.7 NW 2.23" 0109000202 Cape Cod MA-BA-18 Falmouth 3.0 E 2.26" 0109000202 Cape Cod MA-BA-11 Bast Falmouth 1.4 ESE 2.39" 0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-19 East Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-10 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-10 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-22 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-32 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-32 Turo 0.8 E 2.67" <td>0109000202</td> <td>Cape Cod</td> <td>MA-BA-2</td> <td></td> <td></td>	0109000202	Cape Cod	MA-BA-2		
0109000202 Cape Cod MA-BA-17 East Falmouth 1.2 WNW 1.90" 0109000202 Cape Cod MA-BA-17 East Falmouth 1.2 WNW 1.90" 0109000202 Cape Cod MA-BA-19 Falmouth 3.0 E 2.26" 0109000202 Cape Cod MA-BA-11 East Falmouth 1.4 ESE 2.39" 0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-47 Mashpee 2.4 wSW 2.13" 0109000202 Cape Cod MA-BA-48 Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-39 Warmouth 2.3 SSE 2.01" 0109000202 Cape Cod MA-BA-30 Warmouth 2.3 SSE 2.01" <	0109000202	Cape Cod	MA-BA-57	Falmouth 5.7 N	
0109000202 Cape Cod MA-BA-17 East Falmouth 1.2 WNW 1.90" 0109000202 Cape Cod MA-BA-19 East Falmouth 0.7 NW 2.23" 0109000202 Cape Cod MA-BA-11 East Falmouth 1.4 ESE 2.39" 0109000202 Cape Cod MA-BA-18 Waquoft 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-47 Mashpee 2.4 WSW 2.13" 0109000202 Cape Cod MA-BA-45 Sandwich 0.9 NNE 2.3" 0109000202 Cape Cod MA-BA-49 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-49 Barristable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-59 Barristable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-12 Yarmouth 0.9 NNW 1.9" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 SEE 2.00" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 SEE 2.00" 0109000202 Cape Cod MA-BA-34 Harwich 2.6 ENE 2.0"	0109000202	Cape Cod	MA-BA-13	Falmouth 0.6 NNW	2.37''
0109000202 Cape Cod MA-BA-19 East Falmouth 0.7 NW 2.23" 0109000202 Cape Cod MA-BA-3 Falmouth 3.0 E 2.26" 0109000202 Cape Cod MA-BA-11 East Falmouth 1.4 ESE 2.39" 0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-47 Mashpee 2.4 WSW 2.13" 0109000202 Cape Cod MA-BA-45 Sandwich 0.9 NNE 2.3" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-29 Varmouth 0.9 NNW 1.9" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.6" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.6" 0109000202 Cape Cod MA-BA-34 Harwich 2.6 ENE 2.0" 0109000	0109000202	Cape Cod	MA-BA-50	Falmouth 5.4 NNE	2.01"
0109000202 Cape Cod MA-BA-3 Falmouth 3.0 E 2.26" 0109000202 Cape Cod MA-BA-11 East Falmouth 1.4 ESE 2.39" 0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.13" 0109000202 Cape Cod MA-BA-19 Mash 6.9 Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-10 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-10 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-10 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-12 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-32 Yarmouth 2.3 SSE 2.01" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-32 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-34 Harwich 2.6 ENE 2.07"	0109000202	Cape Cod	MA-BA-17	East Falmouth 1.2 WNW	1.90''
0109000202 Cape Cod MA-BA-11 East Falmouth 1.4 ESE 2.39" 0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-47 Mashpee 2.4 WSW 2.13" 0109000202 Cape Cod MA-BA-45 Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-39 Preswster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-30 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 01090	0109000202	Cape Cod	MA-BA-19	East Falmouth 0.7 NW	2.23"
0109000202 Cape Cod MA-BA-18 Waquoit 0.6 SSW 2.29" 0109000202 Cape Cod MA-BA-47 Mashpee 2.4 WSW 2.13" 0109000202 Cape Cod MA-BA-45 Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-10 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-22 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-30 Orleans 1.1 E 2.08" 0109000202	0109000202	Cape Cod	MA-BA-3	Falmouth 3.0 E	2.26''
0109000202 Cape Cod MA-BA-47 Mashpee 2.4 WSW 2.13" 0109000202 Cape Cod MA-BA-45 Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-49 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-1 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-31 Yarmouth 2.3 SSE 2.01" 0109000202 Cape Cod MA-BA-35 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-37 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000202	0109000202	Cape Cod	MA-BA-11	East Falmouth 1.4 ESE	2.39''
0109000202 Cape Cod MA-BA-45 Sandwich 0.9 NNE 2.37" 0109000202 Cape Cod MA-BA-10 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-29 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-22 Varmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.01" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-34 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-35 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 <td>0109000202</td> <td>Cape Cod</td> <td>MA-BA-18</td> <td>Waquoit 0.6 SSW</td> <td>2.29''</td>	0109000202	Cape Cod	MA-BA-18	Waquoit 0.6 SSW	2.29''
0109000202 Cape Cod MA-BA-10 East Sandwich 2.3 SE 2.20" 0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-22 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.01" 0109000202 Cape Cod MA-BA-32 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-27 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-34 Armich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-37 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-34 Chatham 0.4 WSW 1.26" 0109000202 </td <td>0109000202</td> <td>Cape Cod</td> <td>MA-BA-47</td> <td>Mashpee 2.4 WSW</td> <td>2.13"</td>	0109000202	Cape Cod	MA-BA-47	Mashpee 2.4 WSW	2.13"
0109000202 Cape Cod MA-BA-59 Barnstable 3.6 W 2.27" 0109000202 Cape Cod MA-BA-21 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-31 Yarmouth 2.3 SSE 2.01" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-32 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-31 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-34 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98"	0109000202	Cape Cod	MA-BA-45	Sandwich 0.9 NNE	2.37"
0109000202 Cape Cod MA-BA-22 Yarmouth 0.9 NNW 1.97" 0109000202 Cape Cod MA-BA-1 Yarmouth 2.3 SSE 2.01" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Turo 0.8 E 2.67" 0109000202 Cape Cod MA-BA-37 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-51 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-52 Orleans 3.0 S 2.04" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 1.7 NW	0109000202	Cape Cod	MA-BA-10	East Sandwich 2.3 SE	2.20"
0109000202 Cape Cod MA-BA-1 Yarmouth 2.3 SSE 2.01" 0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-27 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-31 Orleans 0.8 W 2.38" 0109000202 Cape Cod MA-BA-31 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-34 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW	0109000202	Cape Cod	MA-BA-59	Barnstable 3.6 W	2.27"
0109000202 Cape Cod MA-BA-33 Brewster 1.5 ESE 2.00" 0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-27 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-31 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-31 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-12 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas	0109000202	Cape Cod	MA-BA-22	Yarmouth 0.9 NNW	1.97''
0109000202 Cape Cod MA-BA-52 Truro 0.8 E 2.67" 0109000202 Cape Cod MA-BA-27 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-51 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-30 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-31 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 0.6 E 2.74" 0109000206 <	0109000202	Cape Cod	MA-BA-1	Yarmouth 2.3 SSE	2.01''
0109000202 Cape Cod MA-BA-27 Wellfleet 0.7 NW 2.35" 0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-51 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-12 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-33 Eastham 0.6 SW 2.04" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.3	0109000202	Cape Cod	MA-BA-33	Brewster 1.5 ESE	2.00''
0109000202 Cape Cod MA-BA-36 Harwich 2.6 ENE 2.07" 0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-51 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-12 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30	0109000202	Cape Cod	MA-BA-52	Truro 0.8 E	2.67''
0109000202 Cape Cod MA-BA-37 Orleans 0.8 W 2.33" 0109000202 Cape Cod MA-BA-51 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-12 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E	0109000202	Cape Cod	MA-BA-27	Wellfleet 0.7 NW	2.35"
0109000202 Cape Cod MA-BA-51 Orleans 3.0 S 2.52" 0109000202 Cape Cod MA-BA-12 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 010900205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 010900206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 010900206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 010900206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 010900207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2	0109000202	Cape Cod	MA-BA-36	Harwich 2.6 ENE	2.07''
0109000202 Cape Cod MA-BA-12 Orleans 1.1 E 2.08" 0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000301 Upper Blackstone MA-WR-41	0109000202	Cape Cod	MA-BA-37	Orleans 0.8 W	2.33"
0109000202 Cape Cod MA-BA-30 Eastham 0.6 SW 2.04" 0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 0109000301 Upper Blackstone River <	0109000202	Cape Cod	MA-BA-51	Orleans 3.0 S	2.52"
0109000202 Cape Cod MA-BA-43 Chatham 0.4 WSW 1.26" 0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000207 Nantucket Island MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 010900030 Blackstone MA-NT-2 Nantucket 2.2 E 1.78" 0109000301 Upper Blackstone River	0109000202	Cape Cod	MA-BA-12	Orleans 1.1 E	2.08"
0109000203 Mattapoisett River - Frontal Buzzards Bay MA-PL-19 Rochester 1.2 NNW 1.98" 0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000207 Nantucket Island MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 010900030 Blackstone MA-NT-2 Nantucket 2.2 E 1.78" 0109000301 Upper Blackstone River MA-WR-41 Auburn 2.6 SW 2.28" 0109000302 Lower Blackstone	0109000202	Cape Cod	MA-BA-30	Eastham 0.6 SW	2.04"
0109000204 Paskamanset River - Frontal Buzzards Bay MA-BR-14 Dartmouth 2.5 SSW 2.58" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 010900030 Blackstone Marthas Vineyard MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-41 Auburn 2.6 SW 2.28" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lowe	0109000202	Cape Cod	MA-BA-43	Chatham 0.4 WSW	1.26''
0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-5 Little Compton 1.7 NW 2.43" 0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 01090003 Blackstone Blackstone 0109000301 Upper Blackstone River MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48"	0109000203	Mattapoisett River - Frontal Buzzards Bay	MA-PL-19	Rochester 1.2 NNW	1.98''
0109000205 Sakonnet Point - Frontal Rhode Island Sound RI-NW-7 Little Compton 0.6 E 2.74" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000307 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 010900030 Blackstone MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumbe	0109000204	Paskamanset River - Frontal Buzzards Bay	MA-BR-14	Dartmouth 2.5 SSW	2.58''
0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-5 West Tisbury 2.9 N 2.70" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 01090003 Blackstone MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000205	Sakonnet Point - Frontal Rhode Island Sound	RI-NW-5	Little Compton 1.7 NW	2.43''
0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-9 West Tisbury 0.4 S 2.30" 0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 01090003 Blackstone West Tisbury 0.4 S 2.2 E 1.78" 01090003 MA-WR-41 Nantucket 3.8 WNW 1.78" 01090003 Upper Blackstone MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000205	Sakonnet Point - Frontal Rhode Island Sound	RI-NW-7	Little Compton 0.6 E	2.74''
0109000206 Elizabeth Islands - Marthas Vineyard MA-DK-2 Vineyard Haven 0.8 WSW 2.67" 0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 01090003 Blackstone MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-5	West Tisbury 2.9 N	2.70''
0109000207 Nantucket Island MA-NT-1 Nantucket 3.8 WNW 1.78" 0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 01090003 Blackstone Malackstone Walackstone Walackstone Walackstone 2.28" 0109000301 Upper Blackstone River MA-WR-41 Auburn 2.6 SW 2.28" 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-9	West Tisbury 0.4 S	2.30''
0109000207 Nantucket Island MA-NT-2 Nantucket 2.2 E 1.78" 01090003 Blackstone MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000206	Elizabeth Islands - Marthas Vineyard	MA-DK-2	Vineyard Haven 0.8 WSW	2.67''
01090003 Blackstone 0109000301 Upper Blackstone River MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000207	Nantucket Island	MA-NT-1	Nantucket 3.8 WNW	1.78''
0109000301 Upper Blackstone River MA-WR-41 Auburn 2.6 SW 2.28" 0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000207	Nantucket Island	MA-NT-2	Nantucket 2.2 E	1.78''
0109000301 Upper Blackstone River MA-WR-43 Leicester 2.4 ESE 2.42" 0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	01090003	Blackstone			
0109000302 Lower Blackstone River RI-PR-50 Harrisville 1.2 SSE 2.67" 0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000301	Upper Blackstone River	MA-WR-41	Auburn 2.6 SW	2.28''
0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000301	Upper Blackstone River	MA-WR-43	Leicester 2.4 ESE	2.42''
0109000302 Lower Blackstone River RI-PR-28 North Smithfield 0.7 SE 2.48" 0109000302 Lower Blackstone River MA-NF-26 Bellingham 2.4 S 2.47" 0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000302	Lower Blackstone River	RI-PR-50	Harrisville 1.2 SSE	2.67''
0109000302Lower Blackstone RiverMA-NF-26Bellingham 2.4 S2.47"0109000302Lower Blackstone RiverRI-PR-59Cumberland Hill 0.9 NW2.23"	0109000302	Lower Blackstone River		North Smithfield 0.7 SE	2.48''
0109000302 Lower Blackstone River RI-PR-59 Cumberland Hill 0.9 NW 2.23"	0109000302	Lower Blackstone River	MA-NF-26	Bellingham 2.4 S	2.47''
	0109000302	Lower Blackstone River			2.23"
	0109000302	Lower Blackstone River	RI-PR-55	Cumberland Hill 3.3 NE	2.60''

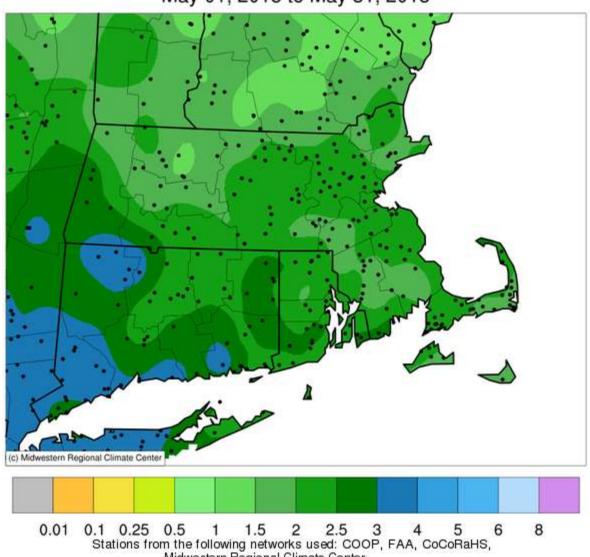
01090004	Narragansett			
0109000401	Upper Taunton River	MA-BR-30	Taunton 3.9 N	1.86"
0109000401	Upper Taunton River	MA-NF-31	Stoughton 1.2 E	2.62"
0109000401	Upper Taunton River	MA-PL-22	East Bridgewater 0.3 WSW	2.28"
0109000401	Upper Taunton River	MA-PL-23	Pembroke 2.8 SW	2.12"
0109000402	Middle Taunton River	MA-PL-17	Plympton 0.9 NNE	2.07"
0109000403	Threemile River	MA-NF-19	Foxborough 1.8 SSW	2.44"
0109000403	Threemile River	MA-BR-33	Taunton 2.4 W	1.96"
0109000403	Threemile River	MA-BR-9	Taunton 2.6 NW	2.13"
0109000404	Ten Mile River	MA-BR-23	Attleboro 0.9 ENE	1.95"
0109000405	Wonnasquatucket River-Moshassuck River	RI-PR-33	Greenville 0.7 NNW	1.98''
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-51	North Smithfield 0.6 S	2.24"
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-60	North Providence 0.9 E	1.92"
0109000405	Woonasquatucket River-Moshassuck River	RI-PR-53	Providence 1.7 N	1.86"
0109000406	Pawtuxet River	RI-PR-57	Cranston 1.2 SSE	2.40"
0109000406	Pawtuxet River	RI-PR-17	Cranston 4.1 E	2.42"
0109000406	Pawtuxet River	RI-PR-44	Cranston 4.2 ENE	2.19"
0109000407	Palmer River	MA-BR-2	Rehoboth 2.1 N	2.44"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-3	Norton 1.8 NNE	2.40"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-16	Somerset 0.4 SSE	1.92"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-19	Somerset 2.0 NNE	2.16"
0109000408	Lower Taunton River - Frontal Mount Hope Bay	MA-BR-8	Dighton 1.1 WSW	2.39"
0109000409	Narragansett Bay	RI-WS-31	Kingston 7.5 NNE	2.99"
0109000409	Narragansett Bay	RI-WS-44	North Kingston 1.5 SSW	2.64"
0109000409	Narragansett Bay	RI-KN-2	East Greenwich 2.3 ESE	2.27"
0109000409	Narragansett Bay	RI-PR-32	Providence 2.3 NE	2.04"
0109000409	Narragansett Bay	RI-NW-18	Jamestown 0.3 SSE	2.17"
0109000409	Narragansett Bay	RI-BR-5	Barrington 1.3 WNW	2.14"
0109000409	Narragansett Bay	RI-NW-4	Middletown 1.1 SW	1.64"
0109000409	Narragansett Bay	RI-NW-19	Portsmouth 2.3 S	2.33"
0109000409	Narragansett Bay	RI-NW-16	Portsmouth 1.3 S	2.50"
0109000409	Narragansett Bay	RI-NW-20	Tiverton 1.0 SSW	2.16"
01090005	Pawcatuck-Wood			
0109000501	Wood River	RI-WS-1	Hope Valley 3.7 S	2.66"
0109000502	Upper Pawcatuck River	RI-WS-46	Westerly 3.4 E	2.13"
0109000502	Upper Pawcatuck River	RI-WS-42	Richmond 4.6 NNE	2.52"
0109000502	Upper Pawcatuck River	RI-WS-45	Charlestown 4.7 NNE	2.31"
0109000502	Upper Pawcatuck River	RI-WS-37	Kingston 2.4 SW	2.60''
0109000502	Upper Pawcatuck River	RI-WS-40	West Warwick 7.7 S	2.61"
0109000503	Lower Pawcatuck River	CT-NL-40	Pawcatuck 1.8 SSE	2.09"
0109000504	Frontal Block Island Sound	RI-WS-36	Charlestown 3.0 WSW	2.43"
01100001	Quinebaug			

0110000102	French River	MA-WR-68	Oxford 0.9 SSW	2.26"	
0110000103	Fivemile River	CT-WN-6	Dayville 2.0 ENE	2.56''	
0110000103	Fivemile River	CT-WN-4	East Killingly 1.3 SW	2.46''	
0110000105	Mossup River	CT-WN-8	Moosup 1.7 NE	2.69''	
0110000106	Pachaug River	CT-NL-21	Griswold 0.9 N	2.89''	
01100002	Shetucket				
0110000201	Willimantic River	CT-TL-18	18 Hebron 5.3 NW		
0110000201	Willimantic River	CT-TL-2	Staffordville 0.4 NNW	2.18''	
0110000202	Natchaug River	CT-TL-27	Willington 2.7 SE	2.22''	
0110000202	Natchaug River	CT-TL-25	Storrs 1.9 ENE	2.24''	
0110000203	Shetucket River	CT-WN-10	South Windham 1.3 NNE	2.62"	
0110000203	Shetucket River	CT-NL-10	Norwich 2.5 NNE	3.05"	
0110000203	Shetucket River	CT-NL-28	Lisbon 2.0 SW	2.44''	
01100003	Thames				
0110000302	Thames River-Frontal New London Harbor	CT-NL-6	New London 1.0 NNW	3.31"	
0110000302	Thames River-Frontal New London Harbor	CT-NL-8	Uncasville-Oxoboxo Valley 1.6 ENE	2.86''	
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-38	Old Lyme 3.4 ESE	3.23"	
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-29	East Lyme 0.5 SW	3.21''	
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-22	Central Waterford 2.7 SSW	3.07''	
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-37	Mystic 1.6 W	2.93''	
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-24	Stonington 1.4 NNW	2.45"	
0110000303	Mystic River - Frontal Fishers Island Sound	CT-NL-18	Stonington 0.5 NNE	2.25"	
01100004	Quinnipiac				
0110000401	Quinnipiac River	CT-NH-14	Prospect 1.9 ENE	2.55''	
0110000401	Quinnipiac River	CT-HR-23	Southington 0.9 SSE	2.78''	
0110000401	Quinnipiac River	CT-NH-44	Wallingford Center 1.9 WNW	2.64''	
0110000401	Quinnipiac River	CT-NH-43	Wallingford Center 3.3 NNW	2.56''	
0110000402	Hammonasset River - Frontal Long Island Sound	CT-NH-21	East Haven 3.5 SSW	3.18''	
0110000402	Hammonasset River - Frontal Long Island Sound	CT-NH-41	Madison Center 1.6 W	3.40''	
0110000402	Hammonasset River - Frontal Long Island Sound	CT-NH-50	Madison Center 4.1 N	3.43''	
0110000402	Hammonasset River - Frontal Long Island Sound	CT-MD-21	Killingworth 2.6 ESE	3.72''	
0110000402	Hammonasset River - Frontal Long Island Sound	CT-MD-5	Westbrook Center 1.1 N	2.87''	
0110000402	Hammonasset River - Frontal Long Island Sound	CT-MD-11	Westbrook Center 1.5 NE	3.06''	
0110000403	Mill River - Frontal Long Island Sound	CT-NH-16	Milford 1.8 E	3.17''	
01100005	Housatonic				
0110000501	Headwaters Housatonic River	MA-BE-11	Great Barrington 3.0 N	2.48"	
0110000501	Headwaters Housatonic River	MA-BE-3	Stockbridge .2 NNE	2.53''	
0110000501	Headwaters Housatonic River	MA-BE-10	Pittsfield 2.0 NNW	3.01"	
0110000503	Konkapot River-Housatonic River	CT-LT-24	Salisbury 3.8 NE	3.20"	
0110000504	Macedonia Brook - Housatonic River	CT-LT-20	Warren 2.4 WNW	2.54"	
0110000506	Candlewood Lake-Housatonic River	CT-LT-22	New Milford 5.3 SSW	2.74"	
0110000508	Still River - Housatonic River	CT-FR-43	Bethel 0.5 E	3.41"	

Still River - Housatonic River	CT-FR-41	Bethel 3.5 NNE	3.90''
Still River - Housatonic River	CT-FR-9	Brookfield 3.3 SSE	3.36"
Outlet Naugatuck River	CT-LT-14	Watertown 0.5 S	2.05"
Outlet Naugatuck River	CT-NH-47	Seymour 1.5 NE	2.83''
Outlet Naugatuck River	CT-NH-45	Naugatuck 1.7 NNE	2.25"
Outlet Naugatuck River	CT-NH-22	Prospect 0.5 SW	2.39''
Housatonic River - Frontal Long Island Sound	CT-FR-42	Monroe 0.1 SE	2.87''
Housatonic River - Frontal Long Island Sound	CT-FR-23	Shelton 1.3 W	3.38''
Housatonic River - Frontal Long Island Sound	CT-FR-46	Stratford 0.2 ESE	3.19''
Housatonic River - Frontal Long Island Sound	CT-FR-55	Shelton 2.7 SSE	3.35"
Saugatuck			
Saugatuck River - Frontal Long Island Sound	CT-FR-31	Newtown 4.6 SSW	3.28''
Norwalk River - Frontal Norwalk Harbor	CT-FR-29	Ridgefield 1.9 SSE	3.26"
Norwalk River - Frontal Norwalk Harbor	CT-FR-3	New Canaan 1.9 ENE	3.11"
Norwalk River - Frontal Norwalk Harbor	CT-FR-25	Norwalk 2.9 NNW	3.08"
Pequonnock River - Frontal Long Island Sound	CT-FR-20	Westport 2.5 ENE	3.06"
Pequonnock River - Frontal Long Island Sound	CT-FR-32	Monroe 0.8 W	3.71"
Mianus River-Rippowam River	CT-FR-39	Stamford 4.2 S	2.86"
Mianus River-Rippowam River	CT-FR-50	Darien 2.8 NW	2.90"
Mianus River-Rippowam River	CT-FR-35	Darien 1.8 ENE	2.55"
Hudson-Hoosic			
Upper Hoosic River	MA-BE-18	North Adams 3.0 WNW	1.90''
Long Island Sound			
Long Island Sound	NY-SF-114	Fishers Island 0.5 NE	2.19"
	Still River - Housatonic River Outlet Naugatuck River Housatonic River - Frontal Long Island Sound Saugatuck Saugatuck Saugatuck River - Frontal Long Island Sound Norwalk River - Frontal Norwalk Harbor Norwalk River - Frontal Norwalk Harbor Norwalk River - Frontal Norwalk Harbor Pequonnock River - Frontal Long Island Sound Pequonnock River - Frontal Long Island Sound Mianus River-Rippowam River Mianus River-Rippowam River Mianus River-Rippowam River Hudson-Hoosic Upper Hoosic River Long Island Sound	Still River - Housatonic River Outlet Naugatuck River CT-LT-14 Outlet Naugatuck River CT-NH-47 Outlet Naugatuck River CT-NH-45 Outlet Naugatuck River CT-NH-22 Housatonic River - Frontal Long Island Sound CT-FR-42 Housatonic River - Frontal Long Island Sound CT-FR-23 Housatonic River - Frontal Long Island Sound CT-FR-46 Housatonic River - Frontal Long Island Sound CT-FR-55 Saugatuck Saugatuck Saugatuck River - Frontal Long Island Sound CT-FR-31 Norwalk River - Frontal Norwalk Harbor CT-FR-29 Norwalk River - Frontal Norwalk Harbor CT-FR-25 Pequonnock River - Frontal Long Island Sound CT-FR-26 Pequonnock River - Frontal Long Island Sound CT-FR-30 Mianus River-Rippowam River Mianus River-Rippowam River CT-FR-35 Hudson-Hoosic Upper Hoosic River MA-BE-18 Long Island Sound	Still River - Housatonic River Outlet Naugatuck River CT-LT-14 Watertown 0.5 S Outlet Naugatuck River CT-NH-47 Seymour 1.5 NE Outlet Naugatuck River CT-NH-45 Naugatuck 1.7 NNE Outlet Naugatuck River CT-NH-22 Prospect 0.5 SW Housatonic River - Frontal Long Island Sound CT-FR-42 Housatonic River - Frontal Long Island Sound Housatonic River - Frontal Long Island Sound CT-FR-23 Shelton 1.3 W Housatonic River - Frontal Long Island Sound CT-FR-46 Housatonic River - Frontal Long Island Sound CT-FR-55 Shelton 2.7 SSE Saugatuck Saugatuck Saugatuck River - Frontal Long Island Sound Norwalk River - Frontal Norwalk Harbor CT-FR-29 Ridgefield 1.9 SSE Norwalk River - Frontal Norwalk Harbor CT-FR-3 New Canaan 1.9 ENE Norwalk River - Frontal Long Island Sound CT-FR-20 Westport 2.5 ENE Pequonnock River - Frontal Long Island Sound CT-FR-30 Mianus River-Rippowam River Mianus River-Rippowam River CT-FR-35 Manus River-Rippowam River CT-FR-36 Manus River-Rippowam River Mianus River-Rippowam River MA-BE-18 North Adams 3.0 WNW Long Island Sound

Accumulated Precipitation (in)

May 01, 2018 to May 31, 2018



0.01 0.1 0.25 0.5 1 1.5 2 2.5 3 4 5
Stations from the following networks used: COOP, FAA, CoCoRaHS,
Midwestern Regional Climate Center
cli-MATE: MRCC Application Tools Environment
Generated at: 6/2/2018 6:39:55 PM CDT

"We do not live at the airport"

This month, especially. Look at the Massachusetts airports. See them? Count 13 airports, 12 with totals less than 2".

How about your reported totals? 91 of 125 from Massachusetts are **MORE** than 2", only 34 **less** than 2".

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

Location	Station ID	May 2018 Precip	May departure from normal	Mar- May Precip	3 month departure from normal	Dec- May Precip	6 month departure from normal	Jun- May Precip	12 month departure from normal
White Plains NY	HPN	3.32"	-0.80''	10.81"	-2.23"	19.07"	-5.06''	36.56"	-12.79''
Danbury CT	DXR	2.37"	-2.07"	9.59''	-3.19"	18.03"	-4.98''	34.94"	-14.93''
New Haven CT	HVN	2.84"	-1.33"	10.42"	-2.48"	19.24"	-3.35"	34.01"	-13.10''
Meriden CT	MMK	1.99''	-2.18"	10.45"	-2.45"	22.00"	-0.59''	42.19"	-4.92''
Hartford CT	HFD	1.94''	-1.95"	9.90''	-1.44"	19.82"	-0.67''	40.49"	-3.11"
Willimantic CT	IJD	2.24"	-1.75"	10.51"	-2.33"	20.86"	-2.66''	41.42"	-7.00''
New London CT	GON	2.43"	-1.42"	10.18"	-2.24"	12.41"	-9.87''	31.25"	-15.24''
Westerly RI	WST	2.03"	-1.76"	9.78"	-3.48"	22.10"	-1.31"	41.60"	-5.79"
Newport RI	UUU	2.15"	-1.37"	11.76"	-0.83"	25.25"	2.12"	42.74"	-3.59"
New Bedford MA	EWB	1.65"	-2.04"	12.21"	-0.86"	27.47"	2.83"	46.39"	-1.97''
Hyannis MA	HYA	1.79"	-1.71"	11.35"	-1.63"	23.91"	-0.90''	53.29"	5.60''
Nantucket MA	ACK	1.61"	-1.81"	15.37"	3.96"	29.06"	7.52''	53.70"	9.28''
Marthas Vineyard MA	MVY	1.72"	-1.59"	7.44"	-4.29"	22.18"	0.04"	44.48"	-0.68''
Taunton MA	TAN	1.69"	-1.90"	14.75"	1.44"	27.09"	1.92"	46.75"	-2.99''
Plymouth MA	PYM	1.66"	-2.03"	13.40"	-0.18''	27.16"	1.90''	47.56"	-1.59"
Norwood MA	OWD	1.53"	-2.15"	13.45"	1.13"	23.86"	0.78''	43.90"	-3.16''
Bedford MA	BED	1.88"	-1.97"	10.71"	-1.48''	17.73"	-4.62''	38.47"	-7.24''
Beverly MA	BVY	1.72"	-2.08"	11.65"	-1.08"	18.29"	-4.44''	36.58"	-9.60''
Lawrence MA	LWM	1.59"	-2.17"	7.41"	-4.29"	13.65"	-6.84''	33.41"	-9.75''
Fitchburg MA	FIT	1.76"	-2.30"	9.89"	-2.67"	18.43"	-4.20''	43.04"	-4.10''
Westfield MA	BAF	2.30"	-2.14"	9.18"	-3.73"	19.31"	-3.12"	37.68"	-10.71''
North Adams MA	AQW	1.49''	-2.62"	6.58''	-4.91"	14.18''	-5.92''	35.36"	-11.25"

May 2018 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.

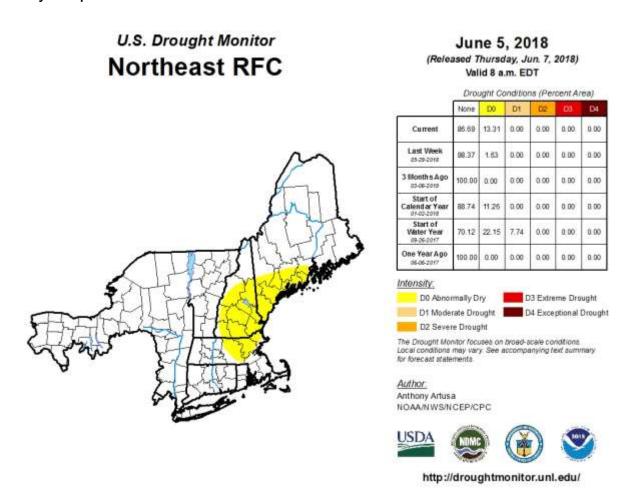
Our average was a record 282 Daily Reports per day, another single month record. 317 Reports, after the storm, and 300 Daily Reports the day after. It appears that Saturdays are our low point for reporting in the week. A strong number of zeros to close out the month.

May 2018							
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
		1 291	2 286	289	287 287	5 268	
6 257	277 277	8 272	9 276	10 278	11 280	12 266	
13 281	14 269	15 289	16 317	17 300	18 289	19 274	
20 293	21 286	22 286	23 299	24 288	25 279	26 265	
27 271	28 276	29 271	30 287	31 287			

From the Drought Monitor.

Did anyone get the normal 4" of precip in May? Did everyone get a single day amount of more than 1"? Do is creeping further into our area. Your reports of zero define how dry it can get. Your Condition Monitoring Reports matter and should state what impacts from precipitation you are experiencing.

Every drop counts and zeros do too!



For a viewing explanation on the Drought Monitor, the CoCoRaHS animated video is on YouTube.

Happy Anniversary, Connecticut!



July 1, 2009. Connecticut is admitted to CoCoRaHS, the 45th state to join the network.

Connecticut CoCoRaHS

<u>Comments by Matt Spies – Connecticut State Coordinator</u>

Cold. Dark. Blowing horizontal. We still go outside and make an observation. We believe that precipitation is important and highly variable.

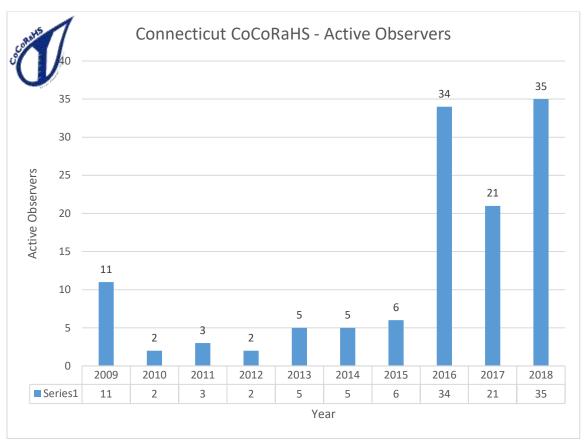
We come inside, fill in a form on a website and press "Submit". That's the end of it. Not entirely. The snow section went to nohrsc.noaa.gov, the precip information is available to the National Weather Service. The Condition Monitoring Report went to the droughtreporter.unl.edu. The Significant Weather Report and the Hail Report.... we saw where those end up and how fast they get there. It only takes minutes to alert someone.

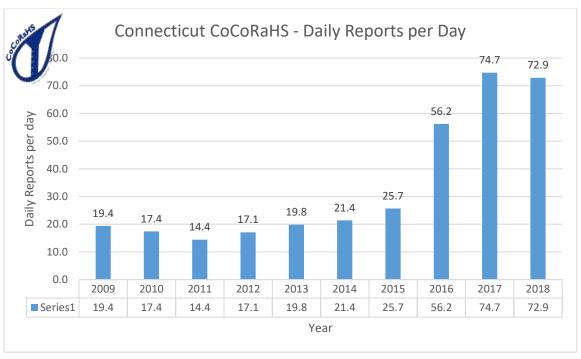
No days missed? At the end of the month, a statement is made to the State Government about the precipitation that fell in each of the 8 counties of CT. "Includes CoCoRaHS data" it says. Live in Middlesex County? *It is* CoCoRaHS data. There is no one else but you in Middlesex County, measuring and reporting precipitation.

Each day, the map comes alive with dots, and behind every dot is someone with a ruler or a gauge. A volunteer. A citizen-scientist. Someone who believes what we believe, that precipitation is important and highly variable.

"Over 100 reports today for Connecticut." If you're going to be told of a new single day reporting record, it's special when it comes from Nolan, sitting across the table, looking at it on his mobile device. With every new signup, every dot on the map, every gap that's filled in, our Founder is watching what you're doing, too.

This concludes our state anniversary series. Thank you for your participation in our anniversary celebrating citizen-science program.





Wrap up

The soft Spring rains will become fewer and the thunderstorms will fire up. You've seen here where the Significant Weather Reports and Hail Reports go and how fast they get to their destinations within the National Weather Service

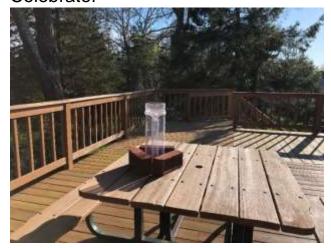
Be a hero. Report your zeros. The most counterintuitive part of our network is a big step towards building your own record of the climate. Continue being the group that leaps over the reporting of larger states by reporting the most zeros, and has few missing reports.

June 17th marks the 20th year of CoCoRaHS. Celebrate this and all of the other achievements made recently.

Summer begins with the summer solstice and that occurs this year on June 21st at 6:07am. This is the last month of increasing daylight. Starting in July, daylight begins to decrease.

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

Celebrate!





MA-BA-2

MA-MD-119