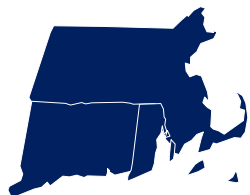




Southern



New England

October 2015

Happy New (Water) Year! Have you made any resolutions for the New Water Year? “Strive for 365”. That is, 365 daily and multi-day reports in the upcoming Water Year. A leap day coming next February, so we “Strive for 366”. The start of the Water Year marks the time for our water storage to replenish itself after being drained during summer growth and sunshine.

Great feedback from many of you through emails and by your Daily Reports from last month’s topic on “Monthly Zeros”. During the two weeks from the Aug 27th to Sep 9th and the other two week period from September 15th to September 28th of mostly rain free days and nights, you sent 2,953 reports of zero, and 180 reports that were not zero. Zero is the most common measurement that we make, and you are all heroes for making so many of them!

There were comments made in September about Dew. Read on. Your comments are great. Keep them coming.

In the past two newsletters, we covered some of the basic tools for making deposits into our precipitation data bank. All of those zeros. Multi-Day Accumulation. Using the app. With compounding interest, in the next topic, it is time to make withdrawals from that bank.

Who looks at CoCoRaHS data? You do!

Across the entire CoCoRaHS network: Tens of thousands of precipitation reports are made per week. Millions of reports for the year. Who looks at all of this? Hydrologists, Meteorologists, Climatologists, River Forecasters, people who create newsletters, and so many others. Let's add one more to the lengthy list of consumers. You!



Looking at all of the data is relatively easy. So many tools have been built over the age of the CoCoRaHS project to do that. From within the CoCoRaHS website, select "View Data". Look down and select "Station Precip Summary".

"Station Snow Summary" can be used soon enough. We all know what's coming!

A choice of 3 stations appear. Only 1 station is necessary, but for this example, let's fill in 3 stations. The 1st station can be your own. For the 2nd station, find another station. Near or far. Meet another station in CoCoRaHS. Take it from one of the stations on a newsletter, within a Water Year Summary, or on a map for stations.

For the 3rd station, have some fun with this. Enter DC-DC-19. From our nation's capital, Washington DC, it is the White House. Since March 20 of this year, the White House reports

for CoCoRaHS. If the White House can report for CoCoRaHS, then *your* house can report for CoCoRaHS. Perhaps, the White House has help with their Daily Reports. Lots of help!

Select a date range, or take the defaults for the current month, and select "Get Summary".

What appears on your next screen has all of the dates within the range selected, but the bottom always impresses. The Totals, being able to compare one summary total to another station's summary total, and comparing a few daily reports with your own.

- - means no report. And that should grab your attention, if it's your station missing a report. ** means covered by a Multi-Day report.

After all of the efforts that you make, all of the zeros reported, the reading of the meniscus on the inner cylinder, getting the decimal point correct, all of the deposits into the bank that you make, **YOU** should see the value in your reports, make a withdrawal on your own, see a pattern of wet or dry periods, compare it to other stations, see the variability that occurs with precipitation even in short distances, learn from other areas, areas where people you know live, and areas where your travels may bring you next.

Make a deposit. Make a withdrawal. See the value in your own reports. We can all have a chuckle about the White House while doing that.

Detail and Summary for September 2015

As we look through the totals, it can be misleading when a significant precipitation event occurs on the first or the last day of the month. Widespread rain events occurred on the 10th-11th, the 13th-14th, and the 30th-1st of Oct. Plenty of clear skies, low running rivers, dry grounds and a lunar eclipse in between.

From the National Weather Service (NWS) Climate sites for Sept 2015

Location	Station ID	Sept 2015 Precip	Sept departure from normal	July-Aug-Sept Precip	3 month departure from normal
Pittsfield MA	PSF	4.57"	0.61"	12.54"	0.34"
Bridgeport CT	BDR	2.70"	-0.78"	7.26"	-3.64"
Hartford CT	BDL	4.77"	0.89"	9.93"	-2.06"
Worcester MA	ORH	4.14"	0.22"	10.22"	-1.65"
Providence RI	PVD	3.19"	-0.73"	8.31"	-2.50"
Boston MA	BOS	3.93"	0.49"	8.21"	-2.01"

From your reports for September 2015

Observers Reporting	155
Observers Reported all 30 days	53
Completed by Multi-Day Reports	14
Stations missing 1 or 2 reports	30 *** Please look at your station data at the end of each month!!
Daily Reports	3545
Zero Daily Reports	2712
Non-Zero Daily Reports	833
Multi-Day Reports	76
Comments	429
Highest Daily Report	5.03" from Little Compton RI (RI-NW-7) reported on 9/11

The streak continues! No stations that appeared in previous newsletters!
 With the use of counties, this table starts in the Berkshire Hills, wraps through CT, central MA, and RI, and to the east and the Cape.

Station	Location	Precip	County & State
CT-LT-5	Winsted 2.6 NNW	3.07"	Litchfield CT
CT-FR-23	Shelton 1.3 W	3.74"	Fairfield CT
CT-NH-14	Prospect 1.9 ENE	2.43"	New Haven CT
MA-HS-10	Northampton 1.6 NE	6.57"	Hampshire MA
MA-HS-2	Westhampton 1.8 SW	6.94"	Hampshire MA
MA-HD-15	Westfield 1.5 SW	3.47"	Hampden MA
MA-HD-16	Wales 0.4 SSW	5.34"	Hampden MA
CT-HR-6	Wethersfield 1.2 WSW	3.64"	Hartford CT
CT-HR-15	Southington 3.0 E	3.21"	Hartford CT
MA-WR-18	Northborough 0.6 SSE	3.29"	Worcester MA
MA-WR-13	Leominster 1.5 S	3.06"	Worcester MA
MA-WR-30	Shrewsbury 1.6 NNE	2.49"	Worcester MA
RI-PR-17	Cranston 4.1 E	2.42"	Providence RI
RI-NW-7	Little Compton 0.6 E	6.33"	Newport RI
MA-BR-9	Taunton 2.6 NW	1.66"	Bristol MA
MA-MD-45	Wilmington 1.5 NE	1.28"	Middlesex MA
MA-MD-43	Somerville 0.8 SSE	1.87"	Middlesex MA
MA-MD-52	Lexington 0.6 SW	2.30"	Middlesex MA
MA-ES-3	Haverhill 3.6 WNW	2.51"	Essex MA
MA-ES-12	Boxford 2.4 S	1.16"	Essex MA
MA-NF-3	Franklin 0.7 NE	1.78"	Norfolk MA
MA-PL-13	Marshfield 2.9 E	2.07"	Plymouth MA
MA-BA-33	Brewster 1.5 ESE	2.74"	Barnstable MA
MA-BA-2	Falmouth 3.1 NNW	2.54"	Barnstable MA

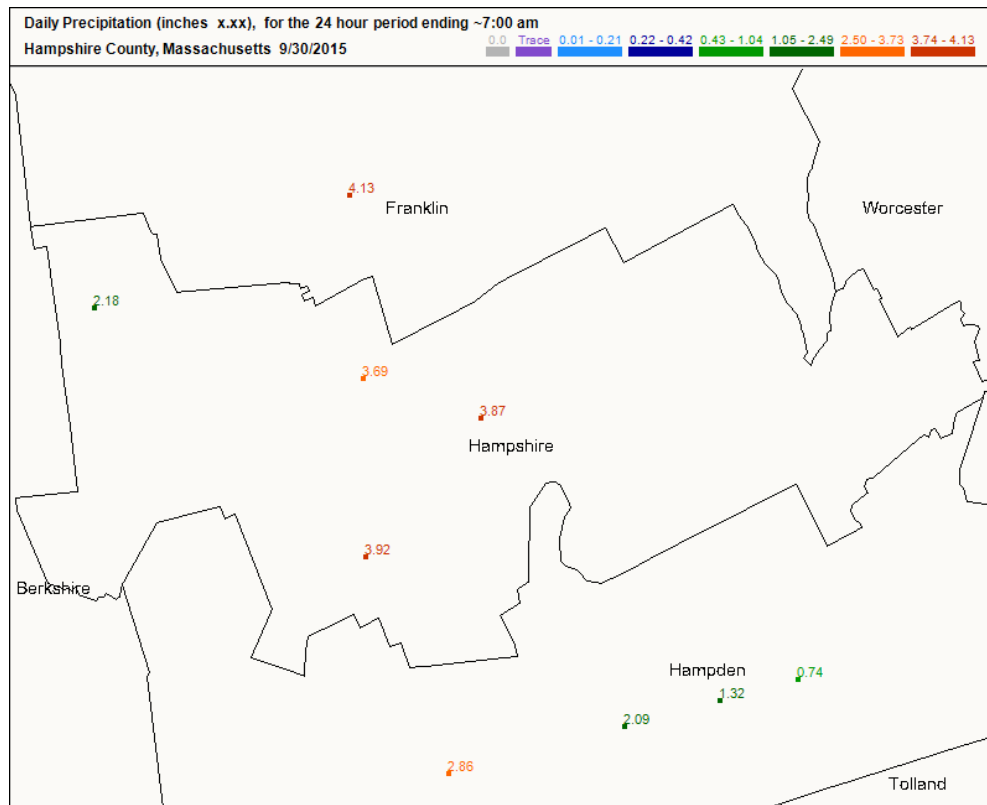
Map of the Month – Hampshire County MA

From the rain event that started before the observation time on September 30 and including the surrounding counties. These stations are our “Sentinels of the Connecticut River.” Reporting totals ranging from 3.47”- 7.93” for September, these stations are emphasizing that this area is drought free. Many heroes with zeros reported in between rain events so that 6 stations in this area have complete data for the month of September. Well done!

An important area in our region because of the Connecticut River watershed. Within it, the 1,000 megawatt hydroelectric plant at Northfield Mountain, Turner Falls Dam, Holyoke Dam, and the 412 billion gallons of drinking water of Quabbin Reservoir.

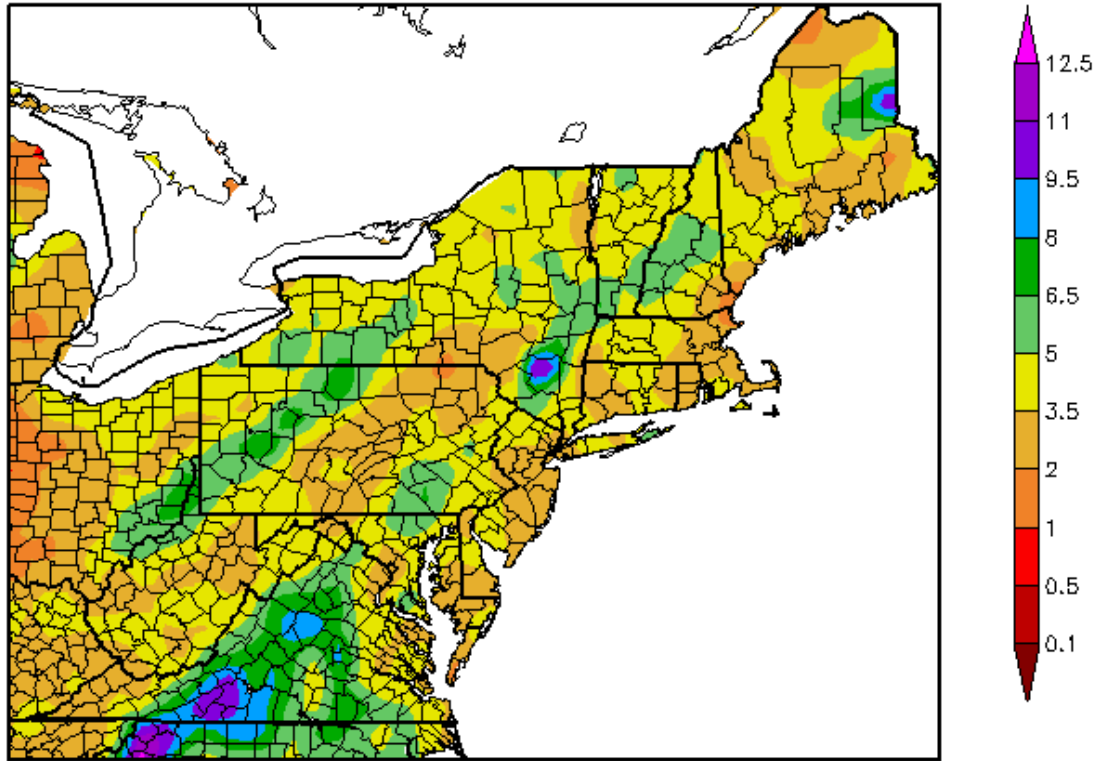
We cannot have enough reporting stations from this area. If anyone can recruit more to join CoCoRaHS in this area, that would be a great help for the many that depend upon the water.

Every drop counts here. Thank you for your zeros and reporting these large rain events from this important area.



From the Climate Center for September 2015

Precipitation (in)
9/1/2015 – 9/30/2015



Generated 10/2/2015 at HPRCC using provisional data.

Regional Climate Centers

A comment from the heavy rain event from the 30th Sep. - 1st of October.

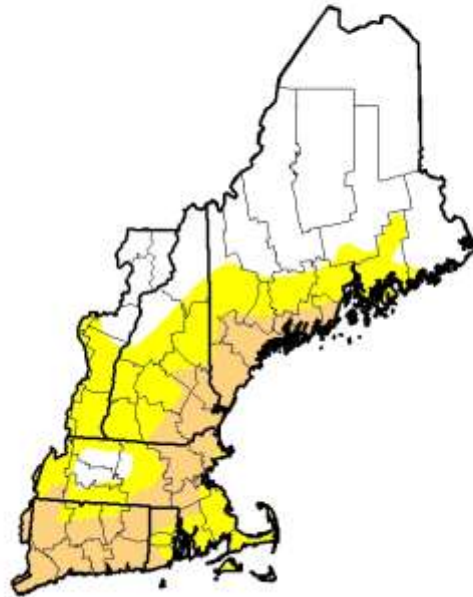
10/1/2015	MA-BA-18	Waquoit 0.6 SSW	1.56	Periods of heavy rain yesterday. Tipping gauge recorded 1.40 in for same period. It seems ppt with intensities ~ 0.20 in/15-min or ~0.80 in/hr are underestimated by the tipping gauge, with % dif increasing with higher intensities.
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1.56” with a 4” diameter gauge. 1.40” with a tipping gauge. This goes to why we do what we do. We believe in making manual measurements with low cost tools. We believe that measurements from many other sources are not as accurate. Thanks for this comment to remind us all.

From the Drought Monitor.

Caution. Look at the date as it was taken before the opening round of heavy rain began. The cycle for this Drought Monitor graphic is data are obtained on a Tuesday and this graphic is released on a Thursday.

**U.S. Drought Monitor
New England Watershed**



September 29, 2015

(Released Thursday, Oct. 1, 2015)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	Name	CO-D4	D1-D4	D2-D4	D3-D4	D4
Current		49.31	50.69	20.91	0.00	0.00
Last Week 08/29/15		49.53	50.47	12.92	0.00	0.00
3 Months Ago 06/29/15		95.07	44.93	7.17	0.00	0.00
Start of Calendar Year 12/30/14		100.00	0.00	0.00	0.00	0.00
Start of Water Year 05/01/14		44.42	55.58	8.51	0.00	0.00
One Year Ago 09/29/14		44.42	55.58	8.51	0.00	0.00

Intensity:

- D0 Anomally 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. See droughtmonitor.unl.edu for forecast statements.

Author:

Eric Lieberhusen
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

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



HOUSATONIC RIVER, BELOW BULLS BRIDGE, KENT CT. PICTURE TAKEN SEPT 26, 2015. RIVER FLOW IS BARELY 230 CUBIC FEET PER SECOND (CFS), WELL BELOW THE NORMAL 500 CFS. RECENT RAINS HAVE RECHARGED THE RIVERS.

What to do about Dew?

October mornings can bring dense fog and the cool clear nights can bring dew. The dew coats everything, the outer cylinder, the funnel, it makes the grass wet, and leaves moisture in the bottom of your inner cylinder. What to do about Dew?



DEW ON FUNNEL

Dew *is not* precipitation. Dew *is* condensation.

This is where your weather awareness gets tested. If you observe clear skies, day and night, no puddles of water on the pavement, and other visual cues that indicate no precipitation occurred as you make your Daily Observation, then do not report the dew as precipitation. Not 0.01" or 0.02". Not even a T (Trace).

If you are not sure if what you find at the bottom of the inner cylinder fell from the sky or came from the condensation, record and report the precipitation amount. Please mention the dew in the comments section of your daily report.

Your comments do and can get looked at rather easily, especially when making a report that does not fit in with surrounding reports and known weather experiences. More about comments in next month's newsletter. In the meantime, keep the comments coming.

Looking ahead toward Winter

If you are leaving the area for someplace warmer for the winter months, good for you! If you are staying behind to endure another New England winter, October and November are good months to consider what you may want to do better to measure snow fall and snow depth, before the colder weather sets in.

One reporting item to mention as we enter October. Please change the "NA" to "0" on "New Snowfall" and "Total Snow and Ice on Ground..." for those many snow free days. This statement applies to all reporting

stations, and it is a little more work if you are using the mobile app. Please continue to do this through April 1. “NA” indicates a missing report. “0” indicates a report. Be a hero. Report a zero. Thank you. More about snow measuring and snow reporting in next month’s newsletter.

Now, before going any further into our look ahead toward winter, one point to make clear. You are under **NO** obligation to spend more money or build more items than what you currently have done. Your volunteer and manual efforts that you make with a 4” rain gauge are relied upon heavily in winter weather. More to say about that in next month’s newsletter as well.

Another smaller point to make just as clear. If you are unable to measure winter’s precipitation, we all understand.

Coming from our recent long and difficult winter with a deep snow pack and frequent snow fall, these ideas are presented only for your consideration as we look ahead toward the winter months.

Ideas such as

- A 2nd outer cylinder for making core measurements, changing out as precip changes from snow to rain, or changing out at your daily observation time?
- A reflective or taller stick to easier locate your snow measuring board?
- A metal snow ruler to measure to the nearest 0.1” and to get through that crusty layer of ice within the snow pack?
- A snow swatter or spatula instead of using your glove hand to get the bottom of the core?
- An accurate weigh scale to weigh the snow core, instead of melting it?
- Are you handy enough to build something on your own?

If you shop online....

- The CoCoRaHS store link. WeatherYourWay.com or AmbientWeather.com
<http://www.cocorahs.org/Content.aspx?page=store>

If you build things on your own....

- From the Forecast Office in Burlington VT: The information on this site is over 10 years old, and it does feature a 3" diameter pipe. Consider taking this plan, but use a 4" diameter tube of PVC instead for two reasons. If you weigh the snow core, you can use the established ratio of 201 grams of weight = 1" of liquid. If you melt the snow core, you can use your clear plastic rain gauge for the final measurement. Be sure to cover the snow core while it melts so that it does not evaporate. This tube has the potential of cutting through an icy snow pack and a deeper snow pack easier and straighter than our 11" long clear plastic outer cylinder would do.
<http://www.erh.noaa.gov/btv/html/snowtubeinstr.htm>
- From Steve Hilberg of Illinois, who writes the [CoCoRaHS Blog](#). For those times where you wish you had three hands for pouring melted snow from the outer cylinder while holding on to the funnel on top of the inner cylinder, being real careful not to spill anything. Called a Measuring Tube Support (MTS). The plans call for using ¾" thick stock, 6" wide. Consider changing some of the dimensions in the Parts List to minimize scrap and the number of cuts needed.
<http://www.cocorahs.org/Media/docs/IL/CoCoRaHS-MTS%20Plans.pdf>

Wrap Up

Our first frost and freeze should occur during October, marking the end of the growing season. Be ready to remove your funnel and inner cylinder on your 4" rain gauge, if below freezing temperatures are forecasted for your area. Write down the precipitation amount, if you have any. An empty inner cylinder is not a big concern when below freezing temperatures arrive for an overnight. However, an inner cylinder with liquid in it, can freeze and can cause the inner cylinder to crack at the base seams. When the warmer temperatures return, so can the funnel and inner cylinder. Better safe than buying replacements.

In the past, it has snowed in October. Another reason to be ready to remove the funnel and inner cylinder. Begin to locate your snow measuring tools. More about snow measuring and reporting in next month's newsletter.

But what occurs every October is this: The brilliant colors that makes so many envious of the autumn splendor in New England. Capture it. There will be harvests of apples, cranberries, grapes, and other crops that depend upon, you guessed it, every drop that counts. Savor it.

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