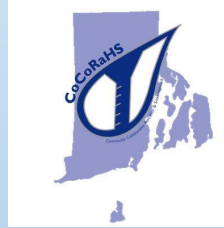
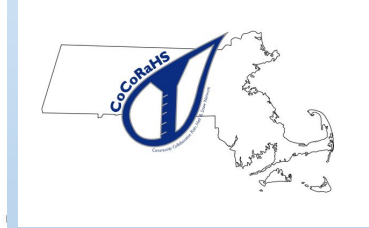




# Southern New England CoCoRaHS

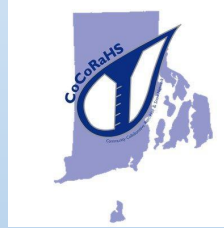
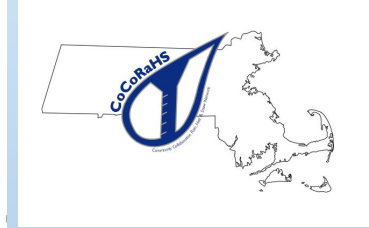
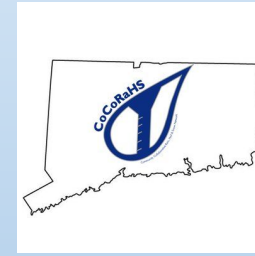


## Winter Weather Reporting Guide December, 2021





# Main Points



- **Do your best!**
  - If you don't want to measure snow, that's fine. Just report what fell in your gauge.
  - If you only want to report snowfall and/or snow depth and not have to worry about melting the snow, that's fine too!
  - Just do what you can
- **You can always contact Joe or Matt if you have questions and report later (see our contact info on the last slide)**



## Quick Tips

### Snow flurries:

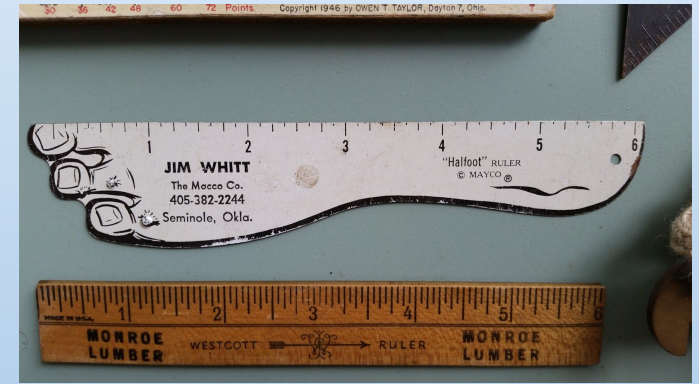
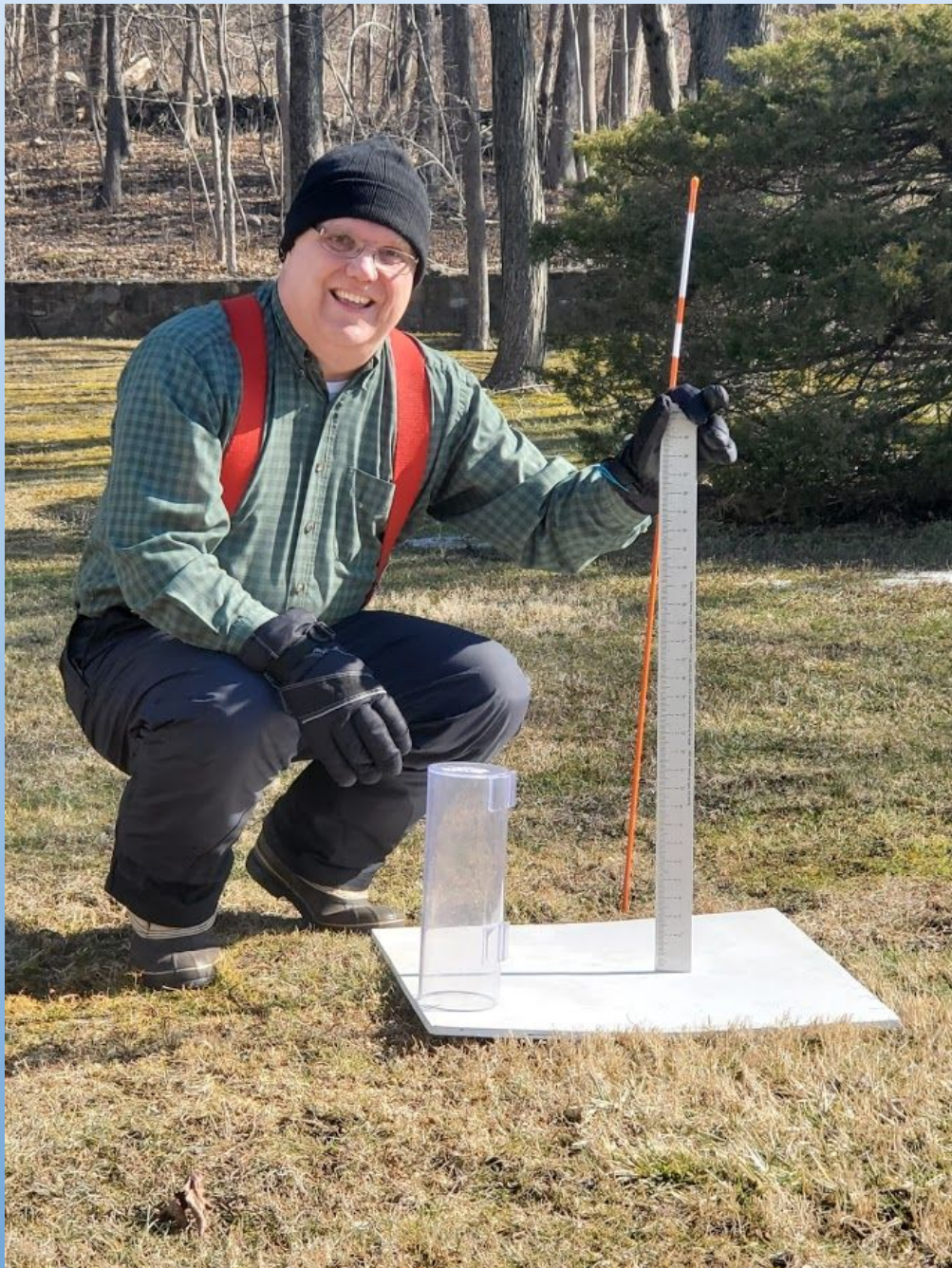
- **Trace** for precipitation.
- **Trace** for new snow.
- You can report a “trace” even if you only see a few snowflakes falling.

### Snow melts as it falls:

- Report melted precipitation.
- **Trace** for new snow.
- Add a Comment:  
***“Snow melted as it fell.”***







**Be ready to measure and report snowfall and snow depth, every day, all year round.**

**Most days, there won't be any snow to measure. Report zero!**

**We are the Rulers of the Snow!**





**Job #1: Focus on the Gauge Catch, what falls in the gauge.**

Ours is a precipitation network. The liquid content of what falls in your gauge is added to all of your other precipitation measurements.

***Funnel and inner cylinder are indoors. They can be damaged in cold weather***

Tools in the other hand.

A metal ruler.

A metal spatula.

**Why metal tools? Ice happens!**



**“Tools of the Trade”**







**Job #2: Measure the depth of new snow.**

**Walk around and take a few measurements.  
Average your results.**





## **Job #2: Measure the depth of new snow.**

**To the nearest 0.1". Average a few measurements. Be away from the buildings and trees. Sweep your snow board every 6 hours (or so), or immediately after snow stops.**

**Take a core sample for the water content of new snow.**

**We can tell when you do not, and report the same as the Gauge Catch!**





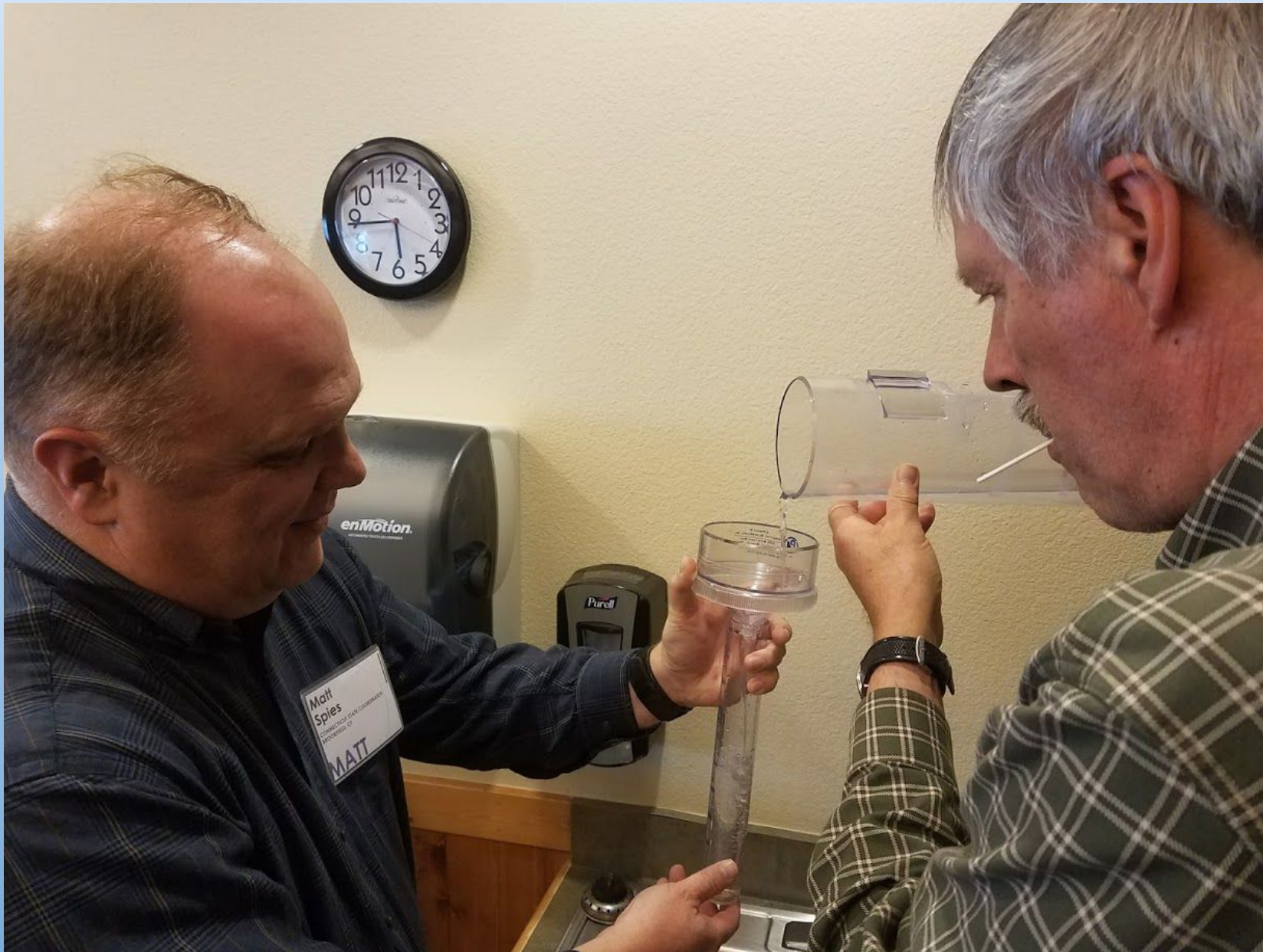
## **Finding the water content of snow.**

**For depths less than 5", about 0.50" of hot tap water in the inner cylinder.**

**For depths more than 5", use 1.00" of hot tap water in the inner cylinder.**

**Why? It makes pouring and subtracting MUCH easier.**

**Whatever you pour in, WRITE IT DOWN before your pour.**



**Having a 2<sup>nd</sup> set of hands... does help!**

**Having a 2<sup>nd</sup> outer cylinder... does help!**

**Measuring with Nolan.... priceless!**





**Don't have enough time? A weigh scale helps. Know the tare weight of your outer cylinder(s).**

**1.00" of liquid = 201g**

**You can build your own tube stand.**

**Write down your numbers!**



**Job #3. Measure the Total depth of snow and ice. To the nearest 0.5"**

**Average a few measurements. Snow does settle.**

**4" PVC can be cut and sharpened to cut through the icy snow.**

**This isn't plumbing!  
This is citizen science!**





**SNOW DEPTH IS THE AVERAGE DEPTH OF SNOW (INCLUDING OLD SNOW AND ICE AS WELL AS NEW) THAT REMAINS ON THE GROUND AT OBSERVATION TIME.**



← If half the ground has 2.0" and half the ground is bare, report 1.0" as your total depth.

→ If more than half the ground is bare report "T" (trace) and mention the range of depths in your comments.



# CAPTURING THE CORE



Slide snow-swatter  
(spatula works, too)  
under gauge



Carefully lift and get  
ready to flip the gauge



Bring the sample inside  
to melt





# SNOW CORES IN DEEPER SNOW

Push  
down



Turn



Pull





## **Freezing rain...**

**... is measured and reported as plain rain.**

**Comments help.**

**Time, or hot tap water, is needed to melt the contents AND wipe off the outside.**

**Do not use a microwave. EVER!**



## **Freezing rain and snow mix!**

**Focus on the Gauge Catch.**

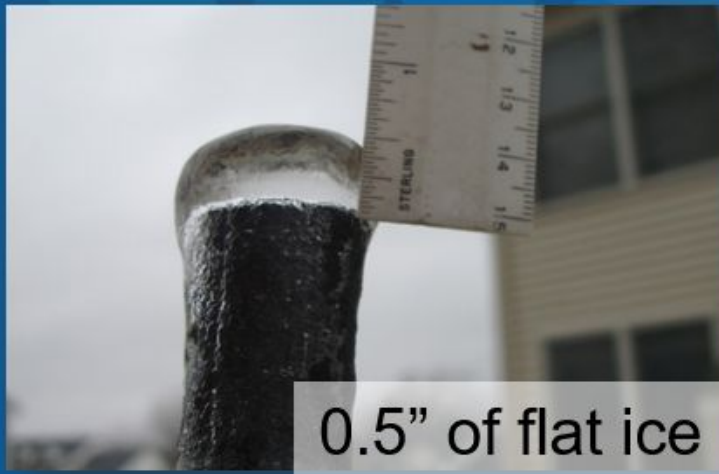
**Gauge Catch and core measurement will likely be different.**

**10:1 ratio of snow fall to liquid does NOT always happen. Your experiences will vary.**





# Ice Accretion Examples



Two ways to measure ice: **radial** surface (such as from a tree branch) or **flat** surface (such a metal post).

NWS forecasts **FLAT ICE** accretion.

If you measure ice from a radial object (i.e tree branch), you can convert to flat ice by **dividing** by 0.4.

Example: In top left picture, 0.3" of ice on the top side of the branch + 0.1" on the bottom side of branch divided by 2 equals 0.2" of **radial** ice.

To convert to **flat** ice,  $0.2" / 0.4 = 0.50"$

**Preferred flat surfaces for measurements**

Bottom Photo: Neil Stuart - NWS Albany, NY  
Jan 15, 2007



# Step 1: Observe

- ◆ **Water Equivalent of New Snow:** Melt the amount of *new* snow that fell in your gauge during the last 24 hours. Measure the amount of liquid to the nearest hundredth of an inch (such as 0.38”).
- ◆ **New Snowfall:** Measure the depth of *new* snow to the nearest tenth of an inch (such as 4.7”) on your snow board.
- ◆ **Melted new snowfall snow core (use if it is windy):**
  - ⇒ Place your gauge upside down on your snow board, firmly push down and “cut a biscuit”.
  - ⇒ Carefully turn the gauge right side up trying not to let any snow spill.
  - ⇒ Be sure to clear the snow off your snow board and place it back on the ground.
  - ⇒ Take the gauge inside and allow the snow to melt. Measure the amount of liquid to the nearest hundredth of an inch (such as 0.38”).
- ◆ **Total Snow and Ice on the Ground (Snow Depth):** Measure the depth of *total* snow to the nearest half an inch (such as 5.5”) on the ground. You may need to take several measurements and average them to get your total depth of snow.
- ◆ **Snow Water Equivalent of Total Snow and Ice on the Ground (Mondays):**
  - ⇒ Place your gauge upside down on the ground, firmly push down and “cut a biscuit”.
  - ⇒ Carefully turn the gauge right side up trying not to let any snow spill.
  - ⇒ Take the gauge inside and allow the snow to melt. Measure the amount of liquid to the nearest hundredth of an inch (such as 0.38”).

# Accuracy matters!

Mistakes happen with reporting, not with measuring.

Water Equivalent of New Snow:

Comments help!

New Snowfall:

Melted new snowfall snow core

Total Snow and Ice on the Ground (Snow Depth)

Snow Water Equivalent of Total Snow and Ice on the Ground (Mondays):

**Precipitation Report Form** Submit Data Reset

Station Number :  
Station Name :

\* Denotes Required Field

12/19/2011 \*Observation Date ?  
7:00 AM \*Observation Time ?

\*Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?

Yes  No Report was taken at registered location?

Observation Notes: (This will be available to the public) ?

**New Snowfall**


Accumulation of new snow in inches to the nearest tenth ?  
 Melted value from core to the nearest hundredth ?

**Total Snow and Ice on Ground at Observation Time**

Depth of total snow and ice (new and old) in inches to the nearest half inch ?  
 Melted value from core to the nearest hundredth ?



☰ CoCoRaHS Observer



Precipitation Report  
CT-FR-9 (english)  
Brookfield 3.3 SSE

Observation Date: 2020-10-27

Observation Time: 07:00

Rain/Melted Snow (in): 0.00

Trace  NA

[Click To Specify Snow & Flooding Info](#)

optional notes

SUBMIT

☰ ○ <

# Android Mobile app.

2 pages.

There are 5 values to fill in. Fill in what you have measurements for. Leave the rest “NA”

Comments help.

☰ CoCoRaHS Observer

New Snow

Accumulation (in.): NA

Trace

Melted Core (in.): NA

Trace

Total Snow & Ice

Depth Total (in.): NA

Trace

Melted Core (in.): NA

Trace

Flooding Info

No flooding occurred ▼

RETURN

☰ ○ <

Logout    Precip Report    Details



**MA-NF-1**  
 Norwood 1.3 NW  
 US Units (in)  
 Precipitation Report

Observation Date:

Observation Time:

Rain/Melted Snow:

Trace Precip    [More Details](#)

# iPhone Mobile app.

2 pages.

There are 5 values to fill in. Fill in what you have measurements for. Leave the rest "NA"

Comments help.

Back    Detail View

**New Snow**    Enter T for Trace

Accumulation (in/cm)

Melted Core (in/mm)

**Total Snow & Ice**    Enter T for Trace

Depth Total (in/cm)

Melted Core (in/mm)

**Flooding Info**

**Additional Notes**





## **Tips.**

**Safety first. None of this is worth getting hurt for.**

**Multiple measurements may be needed within 24 hours.**

**Write your measurements down. Subtract the amounts your pour in.**

**Avoid reporting new snow in the 1<sup>st</sup> value, and other decimal point errors. Accuracy matters.**



## Tips.

**Snow flurries: Trace for precipitation.  
Trace for new snow.**

**Snow melts as it falls: Report melted  
precipitation. Trace for new snow.**

**Have a 2<sup>nd</sup> outer cylinder?  
Cold-soak it! Leave it outdoors, but  
out of the precipitation. Snow does  
not stick to cold gauges.**

**For all of the scenarios we did not  
think of.... Do the best that you can.**



Significant Weather Report		Submit Data	Reset
Station Number : CT-FR-9			
Station Name : Brookfield 3.3 SSE			
* Denotes Required Field			
<input type="text" value="10/28/2020"/>	*Observation Date		
<input type="text" value="PM"/>	*Observation Time		
<input type="text"/>	Minutes	Time duration that the report covers	
Rain			
<input type="text"/>	in.	New Rain and Melted Snow that has fallen during the report duration, in inches to the nearest <b>hundredth</b>	
<input type="text"/>	in.	Total Precipitation, rain and melted snow, since storm began, in inches to the nearest <b>hundredth</b>	
Snow			
<input type="text"/>	in.	Depth of New Snow that has fallen during the report duration, in inches to the nearest <b>tenth</b>	
<input type="text"/>	in.	Total depth of snow and ice on ground at the time of this observation to nearest <b>half inch</b>	
Additional Information			
<input checked="" type="radio"/> Yes <input type="radio"/> No Report was taken at registered location?			
Was There Flooding?			
<input type="radio"/> No			
If Yes, how severe?			
<input type="radio"/> Minor (typical). Street or field flooding.			
<input type="radio"/> Unusual street or field flooding (only see this every few years)			
<input type="radio"/> Severe Flooding			
<input type="radio"/> Extreme (never seen it this bad before)			
Observation Notes <small>(This will be available to the public)</small>			
<input type="text"/>			
		Submit Data	Reset

## Supplemental Reports.

Significant Weather Reports. From the website.

Real time reporting that alerts a NWS Forecast Office.

### Winter Criteria:

- 1"+ snowfall in one hour or less
- 3" snowfall, then final total
- Change in precipitation type
- Anything else you feel is important

**Condition Monitoring Report Form** Submit Data Reset

Station Number : MA-NF-1

Station Name : Norwood 1.3 NW

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

Report Date \*  
 10/28/2020

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

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

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

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

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

Submit Data Reset

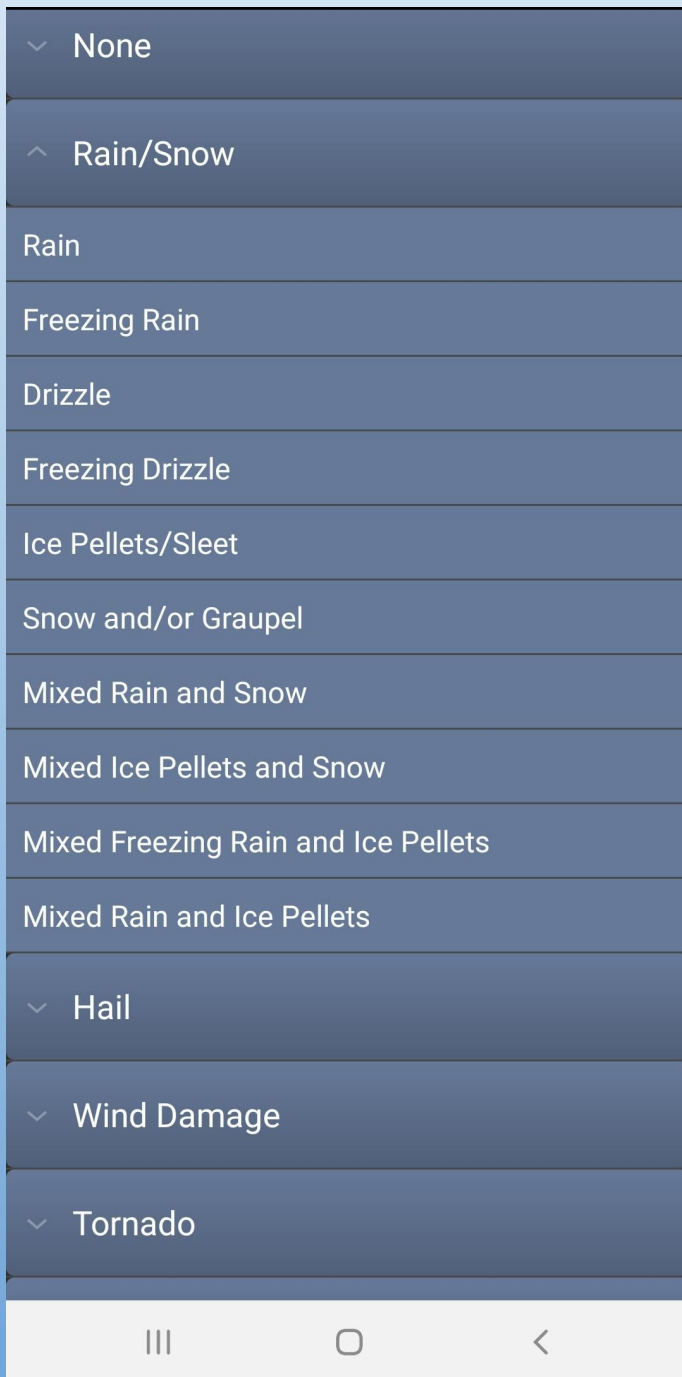
## Supplemental Reports.

Condition Monitoring Reports.  
 From the website.

“A report a week is all we seek”

Used for real-time monitoring for  
 drought and flooding conditions  
 (even in winter)





# mPING

Download and use the app for Apple and Android (free).

Real time reporting from a GPS-enabled mobile device.



**Questions? Email Joe and Matt**  
[jdellica@gmail.com](mailto:jdellica@gmail.com)  
[matt.spies@att.net](mailto:matt.spies@att.net)