Winter 2023

Nebraska State CoCoRaHS Newsletter

Welcome Message

Inside this issue:

It is with great excitement to introduce the Winter 2023 edition of the CoCoRaHS newsletter for Nebraska! The purpose of this publication is to keep Nebraska CoCoRaHS observers informed about the latest weather events and how observers like you help the National Weather Service (NWS) create better weather forecasts.

If you have any requests for information you would like to see in future newsletters, please email me at: NEcocorahs@gmail.com Also, if you no longer wish to continue with this program, please email me at the above email so I can close down your station and remove you from the email lists.

Lastly, thanks for all the excellent reports and observations received over the last year!

Golden Raindrop Club for November 2022-October 2023

The Golden Raindrop club is all of the Nebraska observers who reported every day for the past year. Below is a list of this year's exceptional observers who earned that distinct recognition! **Congratulations!**

PLEASE NOTE: To protect everyone's personal information, only station numbers are given.

NE-XX-## stations are CoCoRaHS stations; all others are NeRain gauges.

Observers that Reported Each Day from November 1, 2022 to October 31, 2023 (365 days total)

NE-AD-2	NE-AD-7	NE-AN-1	boon005
NE-BX-5	Brow4379	butl011	chey037
NE-CM-3	daws002	NE-DD-3	dund010
gage022	NE-JF-4	john005	keit013
Keit4107	lanc015	NE-LA-41	NE-LA-52
lanc072	NE-LC-6	NE-LC-12	NE-LC-16
pawn013	Pawn1882	red_019	rich001
Rich005	Rich4067	sali027	NE-SY-24
NE-SY-36	NE-SN-1	Thay4245	vall003
	york005	york034	

SNOW!

Snow Reminders

It is that time of the year to start preparing for taking snow observations again!

The National Weather Service has created a snow measuring page for the upcoming season. While most of this info, specifically rounding in snow measurements, is for our Co-Op observers, the same measuring techniques can be applied to CoCoRaHS. Check it out: https://www.weather.gov/media/coop/Snow_Measurement_Guidelines-2014.pdf .

If you need a refresher, CoCoRaHS has a series of YouTube videos relating to measuring snow and ice here: https://www.youtube.com/playlist?list=PL86DC4C330F518387

CoCoRaHS also has official Training Slideshows on measuring snow and ice. They are located at: http://www.cocorahs.org/Content.aspx?page=training_slideshows

And finally, official snowfall measurements are in tenths of an inch. However, unless you use a snow stick from CoCoRaHS that has increments of tenths of a inch, most normal rulers only measure in 1/8 inch increments. The table to the right can be used to approximate 1/8 inch increments into tenth inch increments.

1/16 = 0.1	**1/8 = 0.1**	**3/16 = 0.2**	**¼ = 0.3**
5/16 = 0.3	**3/8 = 0.4**	**7/16 = 0.4**	**½ = 0.5**
9/16 = 0.6	**5/8 = 0.6**	**11/16 = 0.7**	**¾ = 0.8**
13/16 = 0.8	**7/8 = 0.9**	**15/16 = 0.9**	

A few reminders when taking winter observations: (Print and keep near observation paperwork for reference)

- DO NOT assume a 10:1 ratio for reporting liquid equivalents. Please, actually melt down the snow.
- Remember that if you report snowfall, then we also need you to report a liquid. You cannot report .4" of snow with a 0 for liquid. Likewise, if you report a trace of snow you must also report a trace of liquid.
- If you decide you only want to report snow or only report liquid for the winter, please leave the other boxes as NA or missing. Do not put a zero in the other boxes! Also, PLEASE leave the snow core box as NA or missing unless you actually do a snow core. Directions are on page 4 if you decide you want to report a snow core.
- Remember that liquid equivalent is measured to the nearest hundredth (.01) snowfall is measured to the nearest tenth (.1) and snow depth is measured to the nearest half inch (2.5 or 4.0). Be careful with your decimals!
- Please report a snow depth even if no new snow has fallen during the observation period.
- If you see snow fall during the observation period, but nothing is on the board or in the can at observation time, you should report a trace of snowfall and a trace of precipitation.
- Along the same lines…if snow falls and melts as it hits the ground, you should report a trace of both precipitation and snowfall but 0 for snow depth (unless there was already snow on the ground).
- Please feel free to contact us if you ever have any questions or accidently enter a wrong value.

Measuring Winter Precipitation

Reporting Liquid Equivalent of New Snow

First, remember to remove the inner tube and funnel. New snow will then accumulate inside the outer tube. To melt down the snow inside the outer tube (and get the liquid equivalent), fill the inner tube with some hot water. Make sure you note how much water is in the little tube and then pour the hot water into the big tube with the snow. Swirl it around to melt all the snow. Finally, you can put the funnel on the little tube and pour the hot water/melted snow combo back into the little tube. After you measure the total, you will have to subtract the amount of hot water you added from the total.

Reporting New Snow

To accurately report new snow, it is recommended that you have a snowboard and a ruler. The snowboard should be painted white to reduce melting between measurements. When snow falls it will accumulate on the board and when it is time for your observation, just go out side and measure the depth of the new snow. After taking your measurement, just dump the snow on the ground and place the board back on top of the existing snow. As we get more and more snow, the board will rise with the total snow depth on the ground (see photo on right to see how this might look after several inches of snow is already on the ground).

Reporting Total Snow Depth

Snow depth is the *average* depth of snow, both old and new. These should be taken each day whether it has snowed or not. It is recommended that you take several measurements around your yard, and then average them together. This eliminates extremely high or extremely low measurements due to drifts or melting.

Oftentimes, snow will not melt uniformly and you will see a combination of bare patches and snow-covered ground. Normally, if more than half of the ground is covered, take an average of the bare and covered areas. For example, if half the ground is covered with 2 inches of snow and the other half is bare, you would report 1 inch for the snow depth. If more than half the ground is bare, you would only report snow depth as a trace.

Unique Circumstances

What happens if it's still snowing when you go out to do your observation? If you have a second outer gauge, just swap the empty one with the full one. If you don't, the most you might miss while you're melting your snow is a hundredth or two (not that big of a deal).

What happens if temperatures are going to warm up enough to melt the snow that has fallen on your snow board before your next observation or the snow changes to rain melting any previous fallen snow? If you know about the warm up ahead of time, you should try to go out and take a measurement of the snow before it melts. If you can't and you know it snowed more than a trace before you could measure, please record NA or missing.

During windy conditions...if there is no visible accumulation, record a Trace for both new snow and liquid equivalent with the depth remaining the same.

If snow fell and accumulated, but it's in drifts...estimate all measurements to the best of your ability.

Freezing rain is reported as liquid only. Please make a comment in your report though so we know it was freezing rain.

Sleet is reported as snow.

Entering Your Data During the Winter

Snow Form on Website

Accurately measuring snowfall can sometimes be very tricky! Between melting and compacting and the blowing wind between your once a day observation, you are lucky to get a good representative reading of the snow. And then you get to the CoCoRaHS entry form, which can sometimes seem more daunting than trying to get your reading in the first place! Here's a helpful little color-coded image to help clarify for you that confusing form and to help you know what numbers go where and how you are supposed to measure each type of reading!

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").

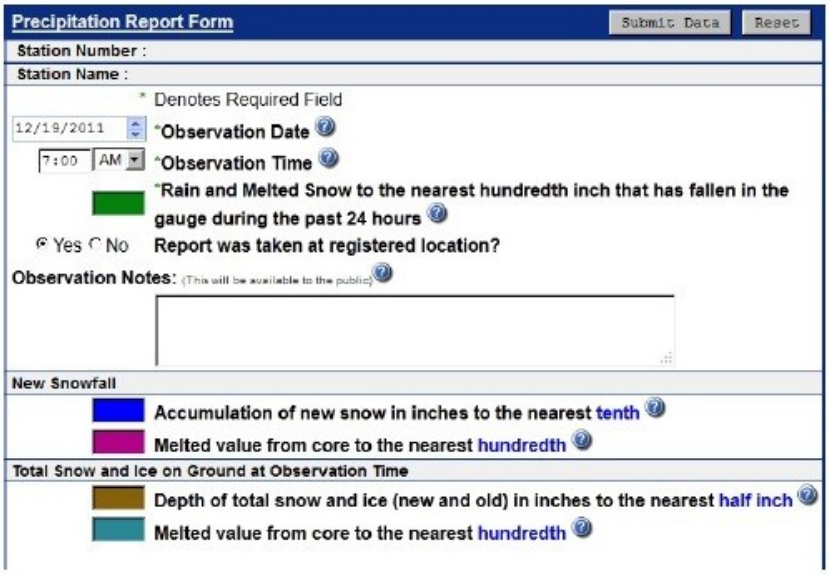
- **Total Snow and Ice on the Ground (Snow Depth):** Measure the depth of ***total*** snow to the nearest half an inch (such as 5.5") on the ground. You may need to take several measurements and average them to get your total depth of snow.

- **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").

Step 2: Report

- Log into the CoCoRaHS website (http://www.cocorahs.org/Login.aspx)

- Enter your data in the appropriate cells and click "Submit Data".



Created by: Tony Merriman, WFO Bismarck

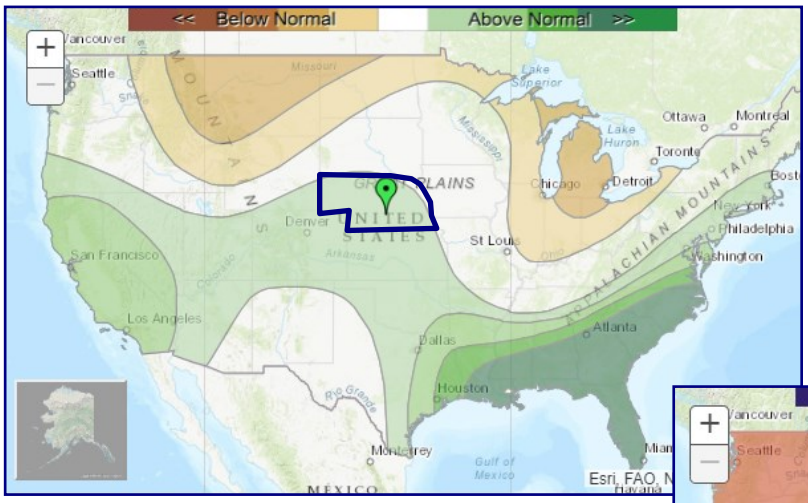
Nebraska Climate

Monthly Normal Snowfall Across Nebraska

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
North Platte	5.1	6.9	4.2	3.6	0	0	0	0	0.1	2.2	3.0	4.5	**29.6**
Valentine	4.4	6.5	6.0	5.6	0.1	0	0	0	0	2.0	4.6	5.0	**34.2**
Omaha	7.2	7.8	3.0	1.0	0.1	0	0	0	0	0.5	1.7	5.8	**27.1**
Lincoln	6.5	7.1	3.4	1.2	0.1	0	0	0	0	0.9	1.5	5.3	**26.0**
Norfolk	6.9	6.1	4.5	2.3	0	0	0	0	0	0.8	3.2	6.1	**29.9**
Grand Island	6.8	7.3	3.8	1.6	0	0	0	0	0.1	1.1	2.3	4.7	**27.7**
Scottsbluff	5.3	7.5	6.8	5.2	0.9	0	0	0	0.3	3.5	5.2	7.8	**42.5**

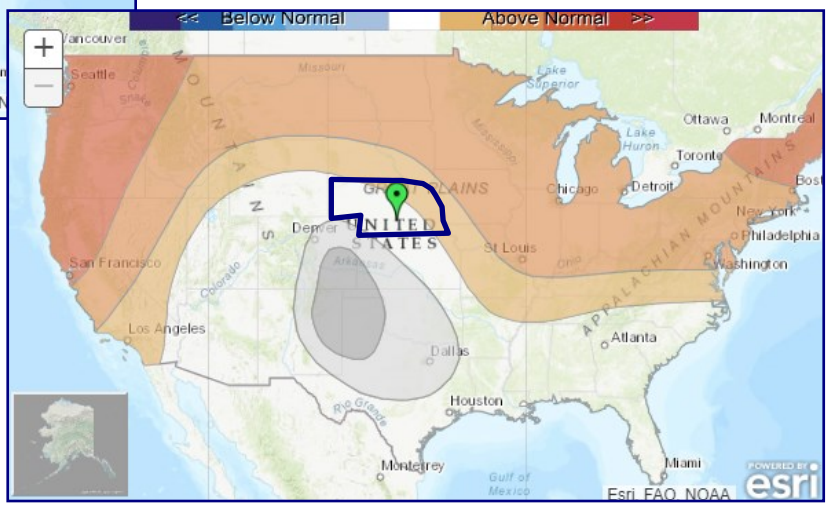
Winter 2023-2024 Climate Outlook

At this time, this year's seasonal outlook is expecting equal chances for the majority of Nebraska to have an above, near, or below-normal temperature season. For precipitation, much of Nebraska is in the slightly above normal precipitation category. More information on the climate outlook can be found on the Climate Prediction Center website at: http://www.cpc.ncep.noaa.gov/ .



Precipitation

Temperature



Miscellaneous CoCoRaHS News

Did You Know...

CoCoRaHS has a series of weather webinars available for you to view! You can access the webinars at http://www.cocorahs.org/Content.aspx?page=wxtalk . About one to two webinars are published each month and they cover a whole range of weather related topics. There are about 42 different webinars that date back to 2011, so there's a good chance you can find a topic you are interested in. If you get some free time, check them out this winter!

We need your snowfall reports and photos!

The NWS is always in need of more snowfall reports from across Nebraska especially after major winter storms! You may use the Significant Weather Report form (under the "Enter New Reports" section) to submit a snowfall report to us at any time! The report immediately gets transmitted to our computers and we can then record your location and report in our storm summary. Please note though, that if you submit a report via this form, do not forget to also include this total in your normal observation report! The Significant Weather Report is just a quick way to get your snowfall report to us so you (and we) don't have to wait until your next report time.

We also would love for you to send in any photos you may take of winter storms, snowfall, ice, etc. We can then use your photos in our storm summary page we create after every major storm event. You may email any photos to me at the below address and I will get it to the appropriate people!

Have you checked out the new Data Explorer yet?

The CoCoRaHS Data Explorer, or "DEx" for short, was recently released at the end of September. This tool provides countless new ways to visualize and analyze your data. It is recommended to use this new feature on larger screens (computer/tablet), however, if viewing it on a smartphone, you'll need to use landscape mode for the best viewing experience. We hope that the Data Explorer will encourage you as an observer to interact with your data on a regular basis and generate enthusiasm for their participation in CoCoRaHS!

You can access the DEx here: https://dex.cocorahs.org/

If you have questions about or suggestions for the Data Explorer, you can use the feedback form at the top of the web page.

CoCoRaHS Contacts Review

If you have any questions, comments, concerns, or inquiries, please contact one of the Nebraska State Coordinators:

Rachel Kulik (myself) at NEcocorahs@gmail.com or Rachel.Kulik@noaa.gov
Bill Sorensen wsorensen1@unl.edu or Gannon Rush grush2@unl.edu

You can also contact your local coordinator which can be found here:
https://www.cocorahs.org/Content.aspx?page=coord_ne

And the National CoCoRaHS Coordinator, Henry Reges, can be reached at: hreges@atmos.colostate.edu.

Also, you can stay up to date on all the important national CoCoRaHS information by liking "CoCoRaHS Headquarters" on Facebook!