

National Weather Service North Platte

CoCoRaHS Newsletter

Welcome Message



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It is with great excitement to introduce the Winter 2021 edition of the CoCoRaHS newsletter for North Central and Western Nebraska! The purpose of this publication is to keep Western 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: Rachel.Kulik@noaa.gov. 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!

Milestones for November 2020–October 2021

Below is a list of exceptional observers who reported each day and nearly each day, in the last year! To protect everyone’s personal information, only station numbers are given. There’s a good chance I missed a station or two. If yours is one I missed, please accept my apologies!

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

| Observers that Reported Each Day from November 1, 2020 to October 31, 2021 (365 days total) | Observers that Missed 30 Days or less from November 1, 2020 to October 31, 2021 (total days reported out of 365 listed in parentheses) | Observers Who Passed Their 1 Year Anniversary of Joining CoCoRaHS | Observers Who Passed Their 5 Year Anniversary of Joining CoCoRaHS |
|---|--|---|---|
| fron007 holt024 NE-LC-12 linc003 linc060 | arth001 (360) chas001 (342) chas012 (340) chas028 (355) chas036 (340) NE-CH-6 (363) NE-CU-4 (349) cust014 (335) cust015 (364) cust021 (353) cust022 (336) cust039 (344) deue004 (337) deue015 (358) fron011 (336) gard010 (345) holt001 (362) NE-HR-1 (363) hook002 (356) keit013 (360) NE-LC-2 (361) NE-LC-6 (363) linc035 (356) linc040 (359) NE-MP-1 (362) perk009 (357) perk012 (337) perk017 (359) perk023 (358) perk037 (359) sher005 (351) NE-WH-2 (360) | NE-CH-7 NE-DL-2 NE-KT-5 NE-KP-1 NE-SD-2 | NE-TS-1 |

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: http://www.nws.noaa.gov/om/coop/reference/Snow_Measurement_Guidelines.pdf. The webpage also has a list of YouTube videos produced by the CoCoRaHS Headquarters on how to measure snow.

CoCoRaHS also has 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.

| | | | |
|---------------|-------------|---------------|-------------|
| $1/16 = 0.1$ | $1/8 = 0.1$ | $3/16 = 0.2$ | $1/4 = 0.3$ |
| $5/16 = 0.3$ | $3/8 = 0.4$ | $7/16 = 0.4$ | $1/2 = 0.5$ |
| $9/16 = 0.6$ | $5/8 = 0.6$ | $11/16 = 0.7$ | $3/4 = 0.8$ |
| $13/16 = 0.8$ | $7/8 = 0.9$ | $15/16 = 0.9$ | |



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

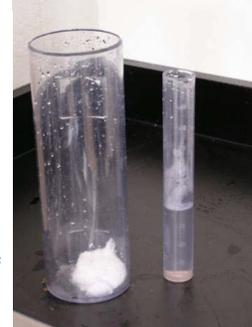
- DO NOT assume a 10:1 ratio for reporting liquid equivalents. Please, actually melt down the snow.
- Remember that if you report snowfall, then we also need you to report a liquid. You cannot report .4" of snow with a 0 for liquid. Likewise, if you report a trace of snow you must also report a trace 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 call us at **1-800-603-3562** if you ever have any questions or accidentally 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 outside 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 snowboard 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".

| Precipitation Report Form | | Submit Data | Reset |
|--|--|-------------|-------|
| Station Number : | | | |
| Station Name : | | | |
| * Denotes Required Field | | | |
| 12/19/2011 | *Observation Date | | |
| 7:00 AM | *Observation Time | | |
| <input checked="" type="checkbox"/> Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours | | | |
| <input type="radio"/> Yes <input type="radio"/> No Report was taken at registered location? | | | |
| Observation Notes: (This will be available to the public) | | | |
| <div style="border: 1px solid black; height: 30px;"></div> | | | |
| New Snowfall | | | |
| <input type="text"/> | Accumulation of new snow in inches to the nearest tenth | | |
| <input type="text"/> | Melted value from core to the nearest hundredth | | |
| Total Snow and Ice on Ground at Observation Time | | | |
| <input type="text"/> | Depth of total snow and ice (new and old) in inches to the nearest half inch | | |
| <input type="text"/> | Melted value from core to the nearest hundredth | | |

Western Nebraska Climate

Monthly Normals for North Central/Western Nebraska

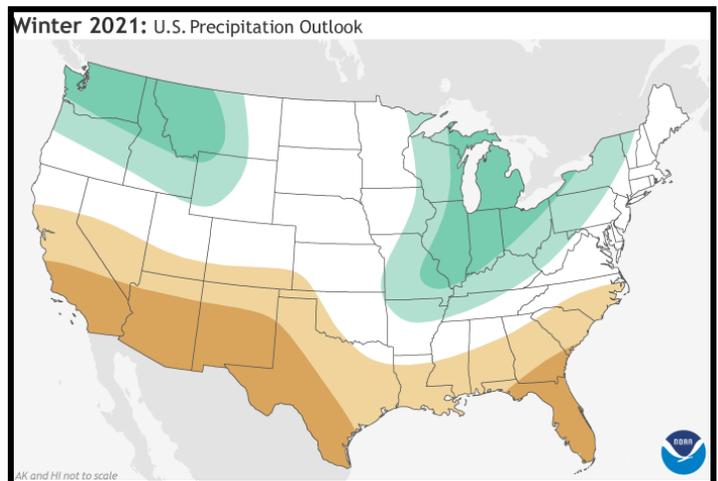
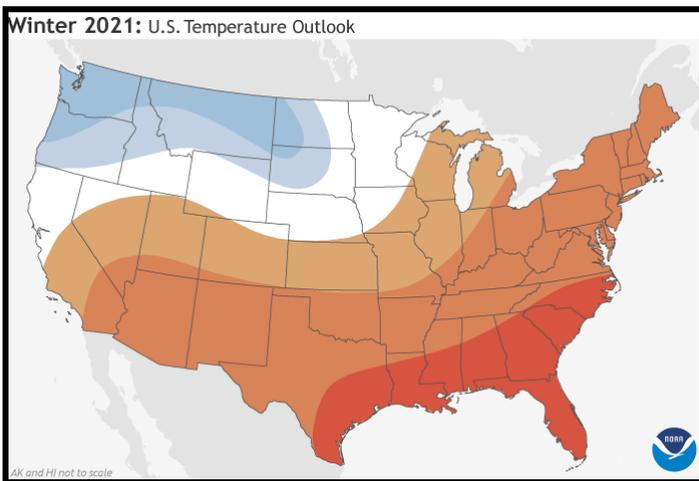
| Snowfall | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|--------------|------|------|------|------|-------|-----|-----|-----|------|------|------|------|
| North Platte | 4.8" | 5.3" | 4.4" | 3.2" | Trace | 0" | 0" | 0" | 0.2" | 2.1" | 3.9" | 4.6" |
| Valentine | 3.8" | 5.6" | 6.5" | 4.6" | 0.1" | 0" | 0" | 0" | 0.7" | 1.5" | 5.4" | 5.1" |

| Temperature Max/Min | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| North Platte | 38.9 11.1 | 43.0 15.0 | 52.5 23.5 | 62.2 33.0 | 71.7 44.1 | 81.8 54.0 | 88.2 60.4 | 86.1 58.2 | 77.8 46.8 | 64.5 33.6 | 50.2 21.0 | 39.1 11.6 |
| Valentine | 36.5 10.7 | 40.0 14.4 | 49.3 23.1 | 60.3 33.0 | 70.9 44.3 | 81.1 54.0 | 88.7 60.4 | 87.0 58.7 | 77.3 47.4 | 63.0 33.9 | 47.7 21.2 | 36.6 11.0 |
| Broken Bow | 37.6 13.5 | 40.7 15.2 | 51.0 24.3 | 61.4 34.2 | 71.1 46.5 | 80.7 56.4 | 86.8 61.5 | 84.1 59.4 | 76.2 48.2 | 63.0 35.8 | 48.7 23.0 | 37.6 13.4 |
| Imperial | 41.1 15.5 | 44.5 18.6 | 54.1 25.6 | 62.4 34.6 | 73.3 46.4 | 84.0 56.0 | 91.0 61.8 | 87.8 59.9 | 79.2 49.7 | 65.1 36.5 | 51.2 24.2 | 41.2 15.6 |

Winter 2021-2022 Climate Outlook

The seasonal outlook has been released on the Climate Prediction Center website! Right now, they are predicting equal chances for Nebraska to have an above, near, or below-normal temperature and precipitation season. We will have to wait for now to see what this winter holds as far as precipitation and temperature is concerned. More information on the climate outlook can be found on the Climate Prediction Center website at: <http://www.cpc.ncep.noaa.gov/>. The climate outlooks are updated every third Thursday of the month.

If you have any questions or comments about the winter outlook for north central Nebraska, please contact Chris Buttler at the following email: christopher.buttler@noaa.gov.



Miscellaneous CoCoRaHS News

We need your snowfall reports and photos!



The NWS is always in need of more snowfall reports from across North Central 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!

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!



Did you hear the exciting news from CoCoRaHS?

Every 10 years the National Centers for Environmental Information (NCEI) calculates new climate normals for the United States. The 1981-2010 normals have been used for the past 10 years. On May 4, the normals for the period 1991-2020 were released and will serve as the base period with which to compare our current weather until 2031.

For the first time ever, CoCoRaHS stations are included in the calculation of normals. The period of record (POR) is long enough for many CoCoRaHS stations so they can be included in the calculations. While no CoCoRaHS station has been operating for 30 years yet (the “Standard” normal), NCEI uses methods to calculate normals based on shorter periods of data. A total of 5448 CoCoRaHS stations qualified for the 1991-2020 climate normal.

More details can be found here: <https://www.cocorahs.org/Content.aspx?page=climate-normals>

CoCoRaHS Contacts Review

If you have any questions, comments, concerns, or inquiries, please contact the Western Nebraska Regional Coordinator, Rachel Kulik, by email at Rachel.Kulik@noaa.gov or call us at **1-800-603-3562** if you accidentally enter a wrong value or have questions about your daily report.

The Nebraska State Climatologist, Mark Anderson, can be reached at: mra@unl.edu or 402-472-6656.

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!

Also, feel free to join the North Platte NWS page on Facebook at “US National Weather Service North Platte”, on YouTube at NWSNorthPlatte, and on Twitter @NWSNorthPlatte.

****Also, be sure to check out our page on Instagram at nwsnorthplatte!****