



# Wyoming CoCoRaHS

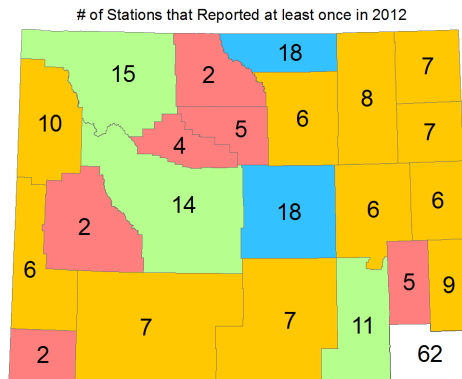
Oct-Dec 2012

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## A Great Quarter and Year for Wyoming CoCoRaHS



Number of stations per county making at least one report in Water Year 2012

Wyoming Climate Atlas, could you please send me a quick email so that I don't offer you a second one!

The 8 highest precipitation totals for 2012 were all from stations in Lincoln and Teton counties, and two of those totals were over 21 inches. There are three reasons for the high totals coming from that region. Snow, snow, and more snow; the snowfall total for the highest of those stations was just over 200 inches. This just reinforces the fact that the bulk of precipitation falling in Wyoming is not rain...and just how important a good snowpack is.

I'd like to first wish all of you a Happy New Year! And then I'd like to thank each and every one of you for making 2012 so successful and for making CoCoRaHS in Wyoming what it is: a very valuable and often used data source.

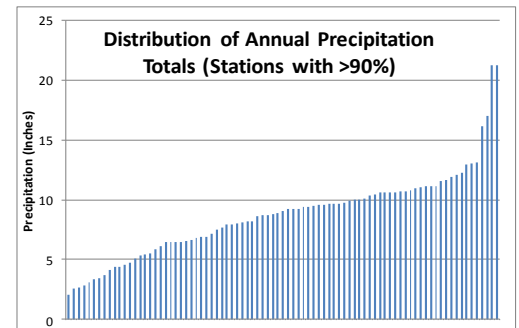
A record number of observations were entered during 2012. There have been 51,347 daily observations entered so far and they are still coming in.

Not only was there a record number of observations, but 2012 also saw a record number of active observers. 238 to be exact. 16 of those stations reported every day of the year (See Never Missed a Drop! 2012, page 3).

The 4th quarter had 205 observers who made at least one report and 37 of you reported every day (See Never Missed a Drop! 1 Oct - 31 Dec, page 2)

Two of those 36 stations were selected at random and I am pleased to congratulate the observers at WY-FM-30 and WY-CV-11 as the winners of a Wyoming Climate Atlas for December. Congratulations!

Will your station be chosen as one of the two for January? There's only one way to find out! Note: If you already have a copy of the



At the other end of the extreme are places like eastern Park County where 8 stations (all reporting 90% or more days of the days in 2012) had annual totals ranging only from 1.68" to 3.65".

We now have active observers in all twenty-three of Wyoming's counties. The map at the top of the page indicates the number of observers in each county who reported during 2012.

In 2012 an additional eleven stations began measuring and reporting the "upside of the water cycle" (evapotranspiration). This made Wyoming one of the lead states in that endeavor and I hope to increase this number considerably during 2013 (See Goals for CoCoRaHS in 2013, page 3).

Here's to 2013 being another great year!

## Wyoming CoCoRaHS 4th Quarter 2012

- ◆ Most observations in a day: 169 Reports on July 6th
- ◆ Greatest Amount: 1.23" on Oct 23rd, Kemmerer
- ◆ Ten days with no precipitation statewide
- ◆ Eighteen days with a trace or less statewide
- ◆ 13,167 daily reports submitted
- ◆ 205 active observers



## Inactive Stations to be Closed

There are 310 stations listed as Reporting in Wyoming. 76 of those stations have not reported since before 2012, though. We will be updating the status of stations shortly and stations that did not report in 2012 will have their status changed from Reporting to Closed.

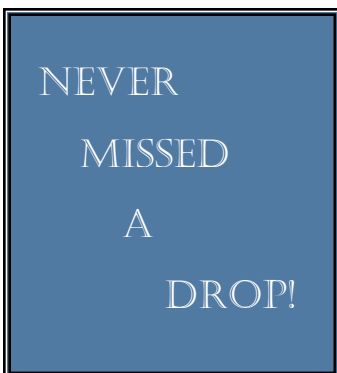
If your station is one of those and you wish to remain active, or if you are uncertain and wish to find out, please send me an email at [antonius@uwyo.edu](mailto:antonius@uwyo.edu) or simply submit an observation (this will keep

your station active). If you are no longer interested in observing, you can either let me know, or wait for your station to be closed. I wish to express my thanks to all those who have taken part and who no longer are interested, your past observations have been valuable and will continue to be used.

If you have not reported for a while and wish to continue but there is something preventing you from entering your information, please contact me either by email or phone. These

reasons might include a broken gage or being unable to login. Gages can easily be replaced and logins can be reset even easier.

For those of you continuing to report: A Big Thank You!



## Stations reporting every day 01 Oct thru 31 Dec

WY-AB-5	WY-CK-6	WY-LM-103	WY-PK-11
WY-AB-8	WY-GS-9	WY-LM-106	WY-PK-16
WY-AB-40	WY-GS-16	WY-LM-112	WY-PK-19
WY-CM-9	WY-GS-20	WY-LM-113	WY-PT-14
WY-CR-1	WY-LM-22	WY-LM-121	WY-SH-14
WY-CR-4	WY-LM-23	WY-LN-2	WY-SH-24
WY-CR-5	WY-LM-36	WY-LN-17	WY-WH-1
WY-CV-11	WY-LM-60	WY-NT-24	
WY-CV-12	WY-LM-63	WY-PK-7	
WY-CK-5	WY-LM-92	WY-PK-8	

## Drought continues its hold on Wyoming

The level of D3 (Extreme Drought) has continued to expand during the 4th quarter of 2012. Almost 2/3 of the state is classified as either D3 or D4 (Exceptional Drought) with only Teton County and extreme western Park County being in D0 (Abnormally Dry). The map at right shows the extents of the categories of drought currently in Wyoming.

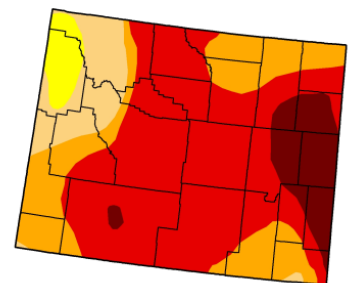
When I provide input to the Drought Monitor in Lincoln, NE, some of the first things I use are the CoCoRaHS and the NWS Cooperative Observer stations. The daily maps from CoCoRaHS provide a good depiction of where precipitation has fallen and where it hasn't. This is one of the reasons I keep mentioning how important it is to report not only how much precipitation you received, but also the days when you received NO precipitation; Wyoming has a good track record of its observers reporting also the lack of rainfall and that has been very helpful.

## U.S. Drought Monitor Wyoming

January 1, 2013  
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	96.15	86.03	64.23	10.51
Last Week (12/25/2012 map)	0.00	100.00	96.15	86.03	64.23	10.51
3 Months Ago (10/02/2012 map)	0.00	100.00	98.01	86.55	57.93	7.64
Start of Calendar Year (01/01/2013 map)	0.00	100.00	96.15	86.03	64.23	10.51
Start of Water Year (09/25/2012 map)	0.00	100.00	98.01	87.30	58.34	2.72
One Year Ago (12/27/2011 map)	99.84	0.16	0.00	0.00	0.00	0.00

**Intensity:**  
■ D0 Abnormally Dry     ■ D3 Drought - Extreme  
■ D1 Drought - Moderate     ■ D4 Drought - Exceptional  
■ D2 Drought - Severe



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, January 3, 2013  
Richard Heim, National Climatic Data Center, NOAA

## QA/QC—What does it mean?

QA/QC stands for Quality Assurance/Quality Control. As it relates to CoCoRaHS, it is a means of making sure that the data in the system are of the highest possible quality. We are always looking for methods to make sure that the data being entered are accurate and I spend time each and every day looking at the observations that are entered and try to ensure that the data for Wyoming are as correct as possible. Recently I have been working on some tools that will list observations that may need to be looked at closer, and these tools are starting to be used at the national level as well.

Some of the checks involve flagging a station that reports a zero when everything around it has a higher value, or a station with a significant amount of precipitation when all the reports nearby are zero. Such reports may be completely accurate, especially given terrain and weather patterns in Wyoming! But, these checks allow us to quickly spot observations that MAY be off. This can be a result of entering an older observation on the wrong day or having been gone for a few days and entering a multi-day observation as a daily observation.

I have already contacted some of you regarding values that I had questions about and I thank you for your quick responses. Some have needed to be corrected, but some have been completely correct and have added to our understanding of weather patterns and micro-climates around the state. I would ask that if you are contacted by me or one of the Regional Coordinators to please respond promptly. I have been very pleased with the Wyoming reports and you can all be proud of the quality of observations you have been taking and reporting. And that quality is appreciated by the people using the data, too!

**Welcome!**

WY-FM-30  
WY-NB-16  
WY-LM-130  
WY-UN-13  
WY-UN-12  
WY-SW-19

## Stations reporting every day in 2012

WY-AB-8	WY-GS-9	WY-LM-36	WY-NT-24	WY-PT-14
WY-CV-11	WY-GS-20	WY-LM-63	WY-PK-8	WY-SH-14
WY-CK-5	WY-LM-23	WY-LM-17	WY-PK-11	WY-WH-1

NEVER  
MISSED  
A  
DROP!

## Goals for CoCoRaHS in 2013—How you can help

- In 2012, the average number of reports entered per day was just over 140 which was more than a 6% increase from last year. I'm hopeful that, in 2013, we can push that average up over 150/day and, with over 230 active observers, I believe that is a very achievable goal.

37,492 of the 51,347 daily reports entered so far for last year were "zeros". The drought map at the left helps explain this large percentage. Those "zero" reports are a tremendous help and become very important when it comes to creating maps of accumulated precipitation because zero is a value. A "missing" is an unknown and cannot be summed. Zero is also the easiest observation to make and those extra observations can help us easily attain the 150+ goal while providing a clearer picture of conditions across Wyoming.

**Goals**

Avg of 150+ Repts/Day  
Dozen new Stations  
3 Dozen Active ETo Stns  
A Real Facebook URL

- Additional stations. I will be trying to get more stations established this year. This has several benefits. Wyoming is a large state with a lot of open space. Consequently, there is still a lot of area about which we are uncertain when it comes to something as variable as precipitation in the summer. Stations in those areas will start to fill some of the gaps.

- I would also like to establish more stations in populated areas; this will help when it comes to looking at micro-climates of areas as well as for QA/QC. This is more of a goal for me and the Regional Coordinators but, if you **do** know someone who would be interested in observing, please have them contact me.

- Establish evapotranspiration gauges at additional stations throughout the state. If your station has a solid record with timely observations, I may be contacting you to see if you are interested in taking the extra readings. A dozen stations were active in 2012 and I'd like to triple this in 2013.

- At least 5 more Facebook followers so we can get rid of all those numbers at the end of the URL!

<http://www.facebook.com/pages/Wyoming-CoCoRaHS/230236620324909>

## State Coordinator

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<http://www.facebook.com/pages/Wyoming-CoCoRaHS/230236620324909>

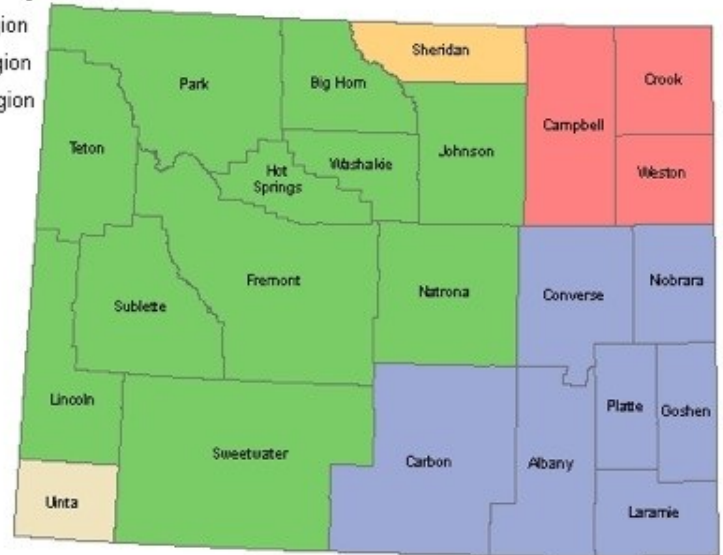
<http://cocorahs.org>

<http://www.wrds.uwyo.edu>

## Wyoming Regions

- West-Central Region
- North-Central Region
- Northeast Region
- Southeast Region
- Southwest Region

## Wyoming CoCoRaHS Regions



## Wyoming Regional Coordinators

### Northeast

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### Arthur Hutcheon

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Alright, WHO threw that?!?!



Who threw that?

Photo by Tony Bergantino

## We Need You!

If you are not a CoCoRaHS observer and would like to take part joining is simple.

Just go to <http://cocorahs.org> and click on the **Join CoCoRaHS** link on the left side of the page.

Participation requires only a few minutes a day, an internet connection, and an interest in measuring and reporting rainfall.

Your observations will appear each day on a map and you can see how much you received compared to your neighbors, neighboring counties, and neighboring states.

Meanwhile, your data are used by various entities throughout the

country such as the National Weather Service, the National Drought Mitigation Center, researchers, and those who are just curious about how much rain fell where.

CoCoRaHS helps to fill in holes in places where there are no observers for other networks. CoCoRaHS is a high-density network which allows us to see the variations in precipitation across the country **and** across town.

If you are interested in joining or have any questions, please contact Tony Bergantino at:

[antonius@uwyo.edu](mailto:antonius@uwyo.edu)