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Welcome Message

By: Tony Merriman

It is with great excitement that we introduce the Winter 2013-2014 edition of the CoCoRaHS newsletter! The purpose of this publication is to keep North Dakota residents informed about the latest weather events in the state and how observers like you assist the National Weather Service (NWS) create better river and weather forecasts.

This newsletter is issued twice a year, one in the summer and one in the winter. The content is truly a team effort as it is produced by a team of North Dakota and Canadian

CoCoRaHS coordinators.

If you have any requests for information you would like to see in the summer edition of this newsletter, please email me at

Tony.Merriman@noaa.gov.

Thanks again for being great weather observers!



The 4-inch rain gauge required to participate in the program

Farm and Ranch Webpage

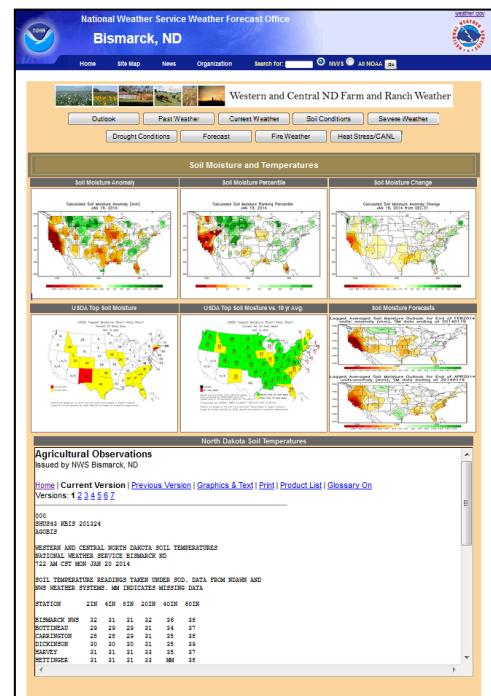
By: Michael Mathews

This past fall, the National Weather Service office in Bismarck created a new web tool geared toward the farmers, ranchers, and gardeners of North Dakota. We know weather information is readily available all over the internet, but not many have the information necessary for those in the farming world.

The purpose of this site and decision making tool is to compile all the information needed by the farming, ranching, and gardening communities into one place. The site includes monthly outlooks from the Climate Prediction Center, the Cold Advisory for Newborn Livestock forecast, heat stress on livestock forecast from the USDA, soil and drought conditions, recent temperature and precipitation information, current conditions, point forecasts, fire weather information, and much more.

This website can be reached by clicking on the link below:

http://www.crh.noaa.gov/bis/?n=ag_soil



Screen capture of the Western and Central North Dakota Farm and Ranch Webpage.



Significant Event Reporting - Snow

By: Mark Ewens

"If you observe something out of the ordinary, please pass it along. CoCoRaHS can help!"



(Source: Tony Merriman)

One of the many dedicated CoCoRaHS observers taking a heavy snow measurement.



Reporting snow is arguably the most difficult weather element to record. Blowing and drifting snow, even "light" amounts, can create blizzard conditions that can choke roadways, ground airlines, and disrupt daily plans. Depending on where you live, even a 2 inch snow driven by 35 mph wind can create white out conditions.

The CoCoRaHS web site says it best: *Winter measurements are a little harder and take a little more time, but they are well worth it. Scientists are just as interested in variations of snow-fall as they are rain and hail, and the water supply we get from melting snow is extremely valuable.* ([CoCoRaHS in the Cold: Measuring in Snowy Weather](#))

What about heavy snow? While relatively rare in North Dakota, storm systems can produce significant amounts of snow in relatively short periods of time with little wind. These storms can be as disruptive to our lives as a good old fashioned blizzard. But what exactly is heavy snow?

The National Weather Service in Grand Forks and Bismarck defines heavy snow as 6 or more inches of snow in 12 hours, or 8 inches or more in 24 hours. Depending on the conditions accompanying the snow-fall (snow amount, bitter cold, gusty winds, etc.), the NWS may issue a Winter Storm Warning or Winter Weather Advisory.

What do we ask of our faithful CoCoRaHS observers? While the newer RADAR technologies allow the NWS to better estimate snowfall, it is still just that – an estimate. And while wind driven snow can be difficult to measure, we all rely on the reports from our observers to help us keep tabs on the storm.

Everyone has a life outside of weather – Business men and women, farmers, truck drivers, Domestic Engineers playing taxi driver – it keeps us all busy. What happens when heavy snow falls, causing travel problems? We need to get the word out!

The CoCoRaHS web site has a form that allows observers to quickly alert the NWS and other users that you have experienced heavy snows that have caused travel problems or visibility restrictions and more. A wealth of information can be relayed to the NWS and other entities as soon as you report them. The form

(image below) allows you to report the facts as you see them. Did 1 inch of snow fall on your community in the past 1 hour? There is a comment block that allows you to detail the impacts. This information is priceless to the NWS and helps us verify our warnings or adjust forecasts to account for the changes that occur during storms.

So as you go through your day and observe significant changes in the weather since your morning report, think "Do folks need to know what's happening?" If you observe something out of the ordinary, please pass it along.

My Data Entry : Significant Weather Report Form

Significant Weather Report		Submit Data	Reset
Station Number : ND-BH-20			
Station Name : Menoken 3.4 WSW			
* Denotes Required Field			
1/20/2013	*Observation Date		
PM	*Observation Time		
Minutes	Time duration that the report covers		
<input checked="" type="checkbox"/> Rain			
<input type="checkbox"/> New Rain and Melted Snow that has fallen during the report duration, in inches to the nearest hundredth			
<input type="checkbox"/> Total Precipitation, rain and melted snow, since storm began, in inches to the nearest hundredth			
<input checked="" type="checkbox"/> Snow			
<input type="checkbox"/> Depth of New Snow that has fallen during the report duration, in inches to the nearest tenth			
<input type="checkbox"/> Total depth of snow and ice on ground at the time of this observation to nearest half inch			
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 (This will be available to the public)			
<input type="text"/>			
Submit Data			Reset

2013 Precipitation Recap

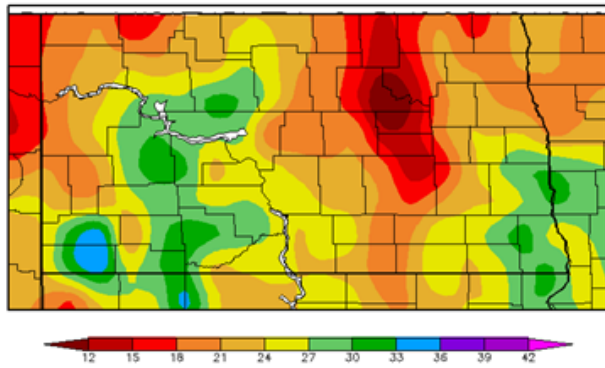
By: Michael Mathews

The year 2013 was many things, but weather-wise in North Dakota, it was wet.

This past year was one of the wettest on record across central and western North Dakota. In fact, 4 of the 5 major reporting sites in western and central North Dakota reported a top 5 wettest year on record. See table to the right for detailed amounts.

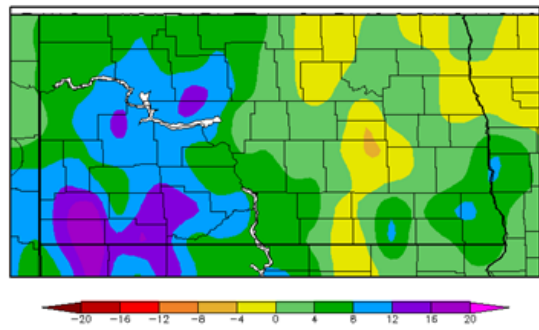
	2013 Precipitation (Inches)	Normal Precipitation (Inches)	Rank as wettest on record
Bismarck	26.75	17.85	4 th
Williston	21.28	14.37	Tied for 3 rd
Minot	24.99	17.19	3 rd
Dickinson	23.20	15.77	4 th
Jamestown	16.13	18.77	49 th

Total Precipitation for 2013 (Inches)



(Source: High Plains Regional Climate Center)

Departure from Normal Precipitation for 2013 (Inches)



(Source: High Plains Regional Climate Center)

Climate Outlook for March - May

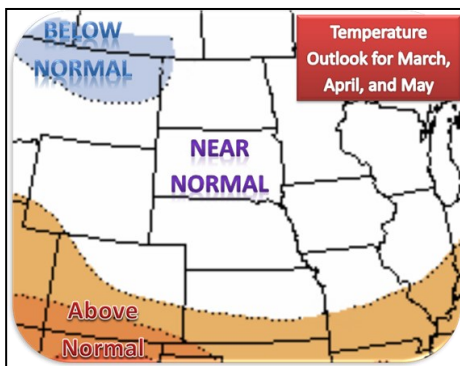
By: Michael Mathews

Looking forward to the planting and early growing season (March, April, and May) of this year, outlooks are not indicating anything abnormal temperature or precipitation-wise.

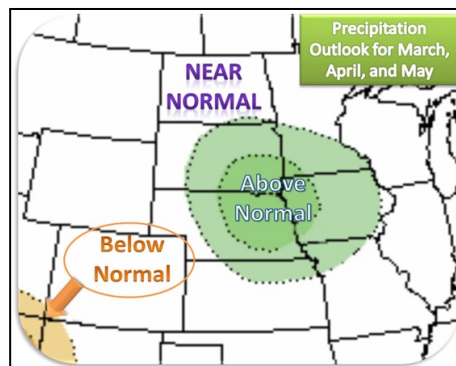
Near normal temperatures are anticipated for all of North Dakota, except the extreme

northwest, where below normal temperatures are forecast.

For precipitation, near normal conditions are expected across all of North Dakota, except a very small portion of the southeast, where above normal precipitation is forecast.



(Source: NOAA)



(Source: NOAA)

"Outlooks are not indicating anything abnormal temperature or precipitation-wise."

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COCORAHS NATIONAL HEADQUARTERS

1371 Campus Delivery
Fort Collins, CO 80523-1371
(970) 491-1196
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National Weather Service Mission Statement:

The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, and adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.



CoCoRaHS Mission Statement:

CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive website, our aim is to provide the highest quality data for natural resource, education and research applications.



Winter 2013-2014 Dakota Thunder Team:

Tony Merriman (editor) - Western & Central North Dakota Regional CoCoRaHS Coordinator / Lead Forecaster (NWS Bismarck)

Adnan Akyuz - North Dakota State CoCoRaHS Coordinator / North Dakota State Climatologist (NDSU)

Mark Ewens - Eastern North Dakota Regional CoCoRaHS Coordinator / Data Acquisition Program Manager (NWS Grand Forks)

Michael Mathews - Meteorologist Intern (NWS Bismarck)

Meet a Cass County Observer

By: Adnan Akyuz



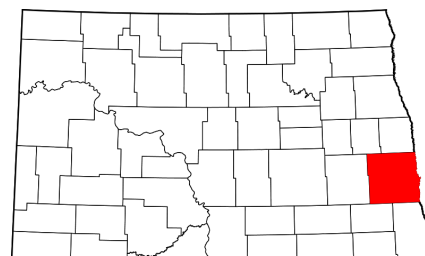
Daryl Ritchison has been a CoCoRaHS observer since June 2009. He makes most of his observations at the WDAY-TV studios in Fargo, ND as he works as the morning meteorologist. Daryl also maintains another CoCoRaHS station in his backyard and tries to report at both sites each day. As a meteorologist, he finds the CoCoRaHS network a

very valuable resource to give his viewing audience information on rain and snow variability. Last summer was an excellent example of how important having multiple observers can be. Two events dropped around 4 inches of rain at the airport in Fargo; yet, the CoCoRaHS network gave widely varying amounts in very short distances. One example was the airport recording 3.96 inches of rain, yet, Daryl, who lives approximately 5 miles away, recorded only 1.44 inches. It was a classic example on how the official measurement in an area does not necessarily mean your backyard received the same amount. If you are new to CoCoRaHS, you may have used some of the training videos on the website. One of those videos was done by Daryl to not only help give individuals tips on how to accurately measure rain and snow, but also to promote the usefulness and history of the CoCoRaHS observing network. His video can be accessed via YouTube at:

<http://www.youtube.com/watch?v=JkpVadNRAYQ#at=16>



Cass County was created by the 1872-73 territorial legislature and named for George Washington Cass (1810-1888), president of the Northern Pacific Railroad at the time it was established. The County Seat has been Fargo from 1873-present. (Source: www.nd.gov)



(Map Source: Wikipedia)