



## Inside this issue:

<b>Welcome Message</b>	<b>1</b>
<b>Rain Gauge Maintenance</b>	<b>1</b>
<b>CoCoRaHS is now in Canada!</b>	<b>2</b>
<b>North Dakota is the CoCoRaHS Cup winner</b>	<b>3</b>
<b>Climate Outlook for Winter</b>	<b>4</b>
<b>Meet a Billings County observer</b>	<b>5</b>
<b>Meet a McLean County observer</b>	<b>6</b>



# The Dakota Thunder

## Welcome Message

By: Tony Merriman

It is with great excitement to introduce the Summer 2012 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 CoCoRaHS coordinators.

If you have any requests for information you would like to see in the winter 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

## Rain Gauge Maintenance

By: Rick Krolak



(Source: Rick Krolak)

During the summer months, it is common for your rain gauge to become dirty and/or cluttered with various forms of debris. Besides our feathered friends leaving small gifts in and around the funnel, insects also seem to find shelter there. Here are a few simple tips to keep your gauge clean to preserve and extend the life of the gauge.

It is good practice to wipe out the gauge and the plastic measuring tube once a week. A few drops of dish

detergent mixed with a cup of warm water and using a soft nonabrasive rag is the best way to keep the outer plastic tube and funnel clean. Wipe them down with the warm water and detergent and rinse thoroughly. The inner tube is a little more of a challenge to clean. It is best to pour about a half cup of warm water and a few drops of detergent into the measuring tube. Swish it around and let it soak for a few minutes. Take your cleaning cloth and twist it down to the bottom of the tube in a turning motion. Do not use any abrasives or plastic bottle brushes as they will scratch and make the gauge difficult to read. Rinse it out and return it to your collection site.

Another handy trick is to take a section of newspaper and

roll it up to where it will fit in the inner tube. Twist it down to the bottom of the tube and give it a few turns.

As the dog days of summer are upon us, the sun will slowly take a toll on your gauge and eventually make it brittle and faded over a few years. You can preserve the life of your gauge by wrapping the outside of the gauge in aluminum foil. Be sure not to cover the funnel. Happy rain catching!



(Source: Rick Krolak)

## CoCoRaHS is now in Canada!

By: Alison Sass and Guy Ash

**"The network now has approximately 50 registered observers and continues to grow."**



CoCoRaHS is now in Canada! The province of Manitoba will act as the pilot province for CoCoRaHS Canada, and the network will expand Canada-wide over the next few years. WeatherFarm and the Province of Manitoba saw a need for more rain and snowfall data following extreme flooding events in the winter of 2010 and summer of 2011 that cost the province hundreds of millions of dollars in damages and compensation. After observing the success of CoCoRaHS in the U.S., it appeared to be a perfect fit for Canada. CoCoRaHS Canada is funded by the Province of Manitoba Department of Infrastructure and Transportation and WeatherFarm. Both entities provided funding for software development, upgrades to the CoCoRaHS website, and subsidized equipment costs for

the first 200 volunteers.

CoCoRaHS Canada was officially launched in December 2011. Rural Municipalities (equivalent to U.S. counties), towns, conservation districts, and First Nations communities were approached to participate in the project. We continue to reach out to government employees and the general public through media and word of mouth. The network now has approximately 50 registered observers and continues to grow. Interest has been expressed by other provinces including Saskatchewan, British Columbia, and Ontario.

CoCoRaHS Canada is coordinated by the WeatherFarm team consisting of Guy Ash (National Coordinator), Alison Sass (National Volunteer Coordinator), and Gerry

McFaddin (National Financial and Logistics Coordinator). A national steering committee consisting of representatives from Environment Canada, several provincial and federal government departments, WeatherFarm, CoCoRaHS, and the National Weather Service – River Forecast Center approves policies and strategies and oversees operations for CoCoRaHS Canada.

WeatherFarm is a web-based weather network that provides real-time, localized weather data to farmers, industry, and the general public in Western Canada from over 850 automated weather stations at farms and businesses.

For more information, please visit the CoCoRaHS Canada webpage at <http://www.cocorahs.org/Canada.aspx>.



(Source: ESRI)



# North Dakota Wins the CoCoRaHS March Madness Cup 2012

By: Adnan Akyüz



(Source: Tony Merriman)

**The prestigious CoCoRaHS Cup**

Every March CoCoRaHS runs a friendly annual competition between all 50 states called "CoCoRaHS March Madness". The contest encourages states to recruit new observers. The state that recruits the most observers wins the prestigious CoCoRaHS Cup.

Starting in 2011, CoCoRaHS began to award two cups per year in two different categories. The "Traditional Count" category awards the Cup to the state that recruits the most observers during the month of March. The "Per Capita Count" category awards the Cup to the state that recruits the most observers per million residents in the state. The traditional count winner in 2012 was North Carolina with 138 new observers signing up in March 2012.

North Dakota became the CoCoRaHS March Madness competition winner in the "Per Capita" category in 2012 with 55 new observers per million capita. Our nearest competitor was South Dakota. They were able to recruit 33 new observers per million

capita. This is the second time North Dakota brought the CoCoRaHS March Madness cup home. North Dakota won its first cup in 2010 with Mississippi coming in second place.

CoCoRaHS implemented the competition based on per capita in 2010 so that states with low populations can compete with the states with high populations. Past winners of CoCoRaHS March Madness Cup based on the population weighted system are:

Indiana: 2011

North Dakota: 2010

North Dakota joined CoCoRaHS in October 2008 and now has 236 active volunteer observers representing 42 out of 53 counties (nearly 80%) in North Dakota.

The true winners of the CoCoRaHS Cup are the citizens of North Dakota. The data from CoCoRaHS

volunteers are routinely being used by many professions and organizations, including the National Weather Service, meteorologists, hydrologists, emergency managers, city utilities, insurance adjusters, agribusinesses, engineers and science teachers. Data are used for many applications, such as water resource planning, irrigation scheduling, severe storm warnings, teaching, predicting crop yields and assessing hail damage.

We need as many volunteer observers as possible in the state to help forecast flood potential, especially in the Red River Valley. It's fun, easy and only takes a few minutes a day. Furthermore, the data becomes a part of the state's climatological history. Therefore, becoming a CoCoRaHS observer would make the observer a part of the State's climatological history.



**"North Dakota became the CoCoRaHS March Madness competition winner in the "Per Capita" category in 2012 with 55 new observers per million capita."**



**Members of the NWS Bismarck Staff hold the CoCoRaHS Cup with pride**

## Climate Outlook for Winter 2012-2013

By: Mark Ewens



**"There is an enhanced likelihood for above normal temperatures this winter season."**

Unusually warm and dry conditions have dominated the weather across much of the U.S. since the winter of 2011/2012. Drought conditions have become severe in portions of the Red River Valley, with many involved in agricultural endeavors expressing a concern for the state of their crops. The dry weather has begun to impact stream-flows as well, with many of the smaller creeks and streams showing the lowest flows in more than six years.

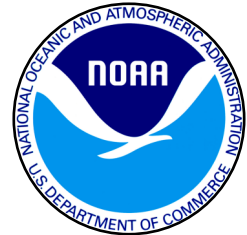
Will the climate favor a reprieve for those in need of rain? Based on the latest from NOAA's Climate Prediction Center (CPC), the odds do not favor much improvement in the next few months. One of the leading factors is the development of El Niño, which often has significant impacts on the winter weather across the Northern Plains. El Niño

is characterized by warmer than normal water in the Equatorial Pacific from the Peruvian Coast to near the Dateline. El Niño winters are often warmer and drier than the long term averages. This warmer water causes changes to the jet stream, reducing the frequency that cold and stormy conditions develop over the Northern Plains.

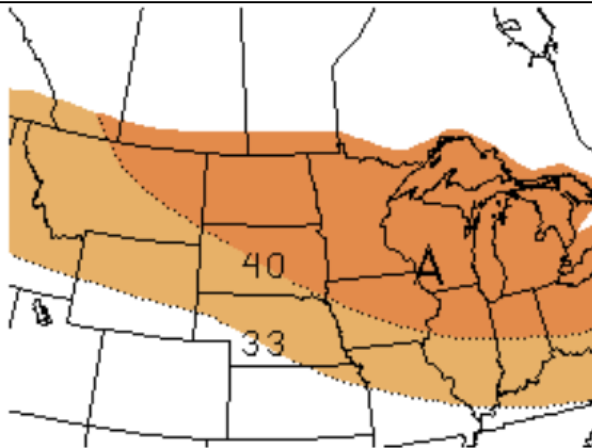
Other climate factors that are more difficult to predict, but can have significant impacts include the Arctic Oscillation (AO) and North Atlantic Oscillation (NAO). These factors can disrupt El Niño (as well as its colder cousin La Niña) causing wide swings in temperature and precipitation. One recent example is the 2009/2010 fall and winter. El Niño was in place but the average 'weather' was more normal both in terms of temperature and snowfall as the AO and NAO frequently dis-

rupted El Niño's impacts.

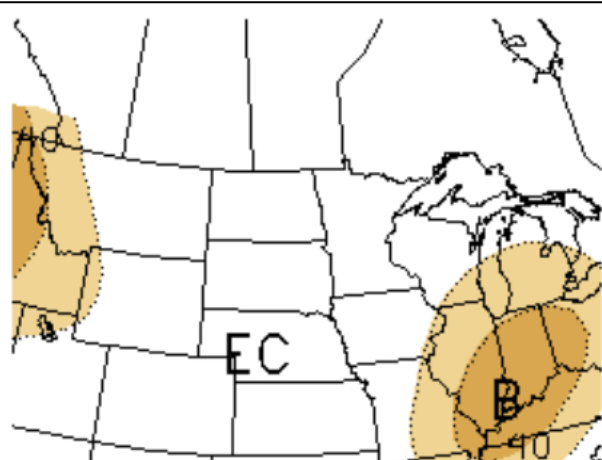
Below, the official CPC Outlooks show that there is an enhanced likelihood for above normal temperatures this winter season (bottom left image). There is no strong precipitation signal for this winter, giving equal chances for above normal or below normal precipitation (bottom right image). That does not mean cold weather, or days with snow, won't occur. Rather, the 'best bet' is for another mild and nominally snowy winter season.



### Winter Temperature Outlook



### Winter Precipitation Outlook

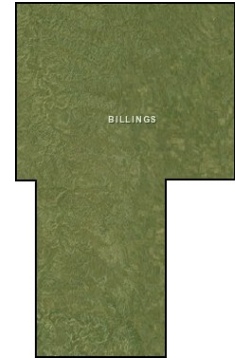


The official December 2012 - February 2013 climate outlook suggests warmer than median temperatures will continue into the winter season. There are equal chances for normal, above normal or below normal precipitation this winter.



## Meet a Billings County Observer

By: Tony Merriman



Billings County was created by the 1879 territorial legislature and named for Frederick H. Billings (1823-1890), an attorney, financier and railroad operator from Vermont and president of the Northern Pacific Railroad, 1879-1881. The government was organized on May 4, 1886. Medora has been the County Seat since 1886. (Source: [www.nd.gov](http://www.nd.gov))

Julie Reis is a CoCoRaHS observer in the Fairfield, North Dakota region. She was raised in Southwestern North Dakota. She was born in Dickinson and grew up ranching in Fairfield.

Julie received her Farm and Ranch Management and Ag Sales and Service degrees from Dickinson State University. She and her husband, along with their three boys, are beef producers. She is also a contract medical transcriptionist and has been fortunate to be able to work from home for the last five years. Julie's boys are the fifth generation to live on her family's ranch in Fairfield.

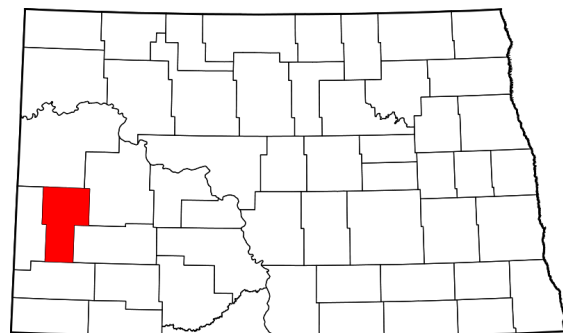
Julie enjoys ranch work, spending time with her husband and boys, hunting, and shooting. She says she even sometimes manages to sneak in some time to read! She and her husband are also active volunteers with the Billings County Rural Fire Department.

Julie's most memorable weather moment was when she saw her first funnel cloud when she was about 9 years old. It developed just to the south of her house. She doesn't remember it touching down, but the wind did a lot of damage to the surrounding areas. She also remembers her dad hollering at her entire family to get in the basement. Of course, in the same breath he shouted, "And go get my camera!" Equally memorable was Julie's first fire season as a volunteer firefighter, when a summer storm in 2000 brought everything but the rain. The lighting storm triggered around 30 fires in northern Billings County, the biggest of which ended up keeping firefighters in the Badlands for days. She will never forget watching lightning strike the ground in front the pumper truck she was responding with. With every strike they saw, there was a puff of smoke that came up from the ground behind it. Amazing how powerful weather can be.

One of the things Julie likes about being a CoCoRaHS observer is that it helps her family keep better track of precipitation. Her oldest two boys, who are 8 and 6, are sticklers about making sure the rain gauge gets read every morning. Their biggest moment in weather observation was getting to record the precipitation on July 6 when they had 1.58"! The boys were so excited to see it overflow into the bigger cylinder! Julie's family also likes being able to compare with other readings from the surrounding area and in other counties.



**"[Julie] will never forget watching lightning strike the ground in front of her family's pumper truck. With every strike they saw, there was a puff of smoke that came up from the ground behind it."**



(Map Source: Wikipedia)

## NATIONAL WEATHER SERVICE - BISMARCK, ND

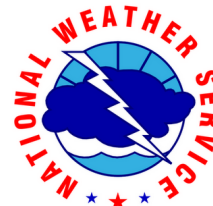
2301 University Drive  
Building 27  
Bismarck, ND 58504  
(701) 223-4582  
<http://www.weather.gov/bis>

## COCORAHS NATIONAL HEADQUARTERS

1371 Campus Delivery  
Fort Collins, CO 80523-1371  
(970) 491-1196  
<http://www.cocorahs.org>

### National Weather Service Mission Statement:

The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, 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 Web-site, our aim is to provide the highest quality data for natural resource, education and research applications.



### Summer 2012 Dakota Thunder Team:

**Tony Merriman (editor)** - Western & Central North Dakota Regional CoCoRaHS Coordinator / Lead Forecaster (NWS Bismarck)  
**Adnan Akyüz** - North Dakota State CoCoRaHS Coordinator / North Dakota State Climatologist (NDSU)  
**Guy Ash** - National Canadian CoCoRaHS Coordinator / Weather Network Manager (Canadian Wheat Board)  
**Alison Sass** - National Canadian Volunteer CoCoRaHS Coordinator / Weather Specialist (Canadian Wheat Board)  
**Mark Ewens** - Eastern North Dakota Regional CoCoRaHS Coordinator / Data Acquisition Program Manager (NWS Grand Forks)  
**Rick Krolak** - Northwestern North Dakota Regional CoCoRaHS Coordinator / Observation Program Leader (NWS Bismarck)



## Meet a McLean County observer

By: Tony Merriman



Don Robison was born in Bismarck and raised on a farm in Killdeer. He now lives in Riverdale. He spent 20 years (1974-1994) on active duty in the Navy and worked for the Department of Defense (Navy) for 15 years (1994-2009).

Don is semi-retired. He does quite a bit of volunteer work for the Audubon Wildlife Refuge. He also drives the Riverdale Ambulance and drives bus for the Underwood school district.

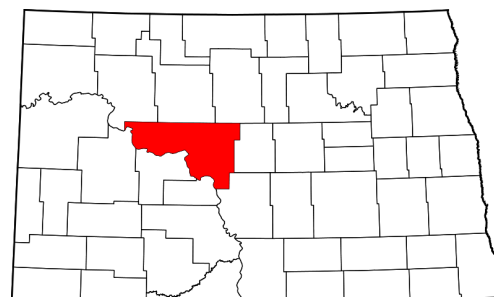
Don is the quintessential outdoorsman. His main hobbies are fishing and hunting.

Don has lived in many places and has been through a lot of different weather situations. He experienced Super Typhoon Pamela in 1976 when it made landfall in Guam with estimated sustained winds of 140 mph (225 km/h) and gusts up to 165 mph (265 km/h). He also experienced hurricanes in Virginia, heavy snow in Maryland, tsunamis and earthquakes in Adak, Alaska, and tropical rains in Diego Garcia, which is a little island in the middle of the Indian Ocean. Of course, he has also experienced multiple North Dakota thunderstorms and snow storms.

Don's favorite part about being a CoCoRaHS observer is sharing weather information and observing how Lake Sakakawea affects the weather.



**McLean County was created by the 1883 territorial legislature and named for John A. McLean of Bismarck (1849-1916), a prominent merchant and the city's first mayor. The government was organized on November 1, 1883. Washburn has been the County Seat since 1883.**  
(Source: [www.nd.gov](http://www.nd.gov))



(Map Source: Wikipedia)