



High Plains

(Weather Information News Data)

December 6, 2012

Volume 6 Issue 3

INSIDE THIS ISSUE

- 1 Skywarn Recognition Day
- 2 Improving the Short Term...
- 4 The Summer of 2012
- 10 Cooperative Observer News
- 11 Measuring Snow
- 12 Welcome...
- 13 White Christmas
- 14 Climate Corner
- 15 Facebook & Twitter



"It celebrates the contributions that volunteer SKYWARN radio operators make...."



A Message from the Meteorologist-in-Charge

SKYWARN RECOGNITION DAY DECEMBER 1, 2012

By Scott A. Mentzer

Amateur radio operators (also known as "hams") have a long history assisting the National Weather Service (NWS). These volunteers send weather reports to the NWS via radio during high impact weather events. Amateur radio weather spotting networks are particularly active across Sherman and Thomas counties.

The NWS office in Goodland, Kansas, joined about 100 other NWS offices and participated in the 14th annual SKYWARN Recognition Day on December 1, 2012. SKYWARN Recognition Day was developed in 1999 by the National Weather Service and the American Radio Relay League. It celebrates the contributions that volunteer SKYWARN radio operators make to the National Weather Service. During the day SKYWARN operators visit NWS offices and contact other radio operators across the world.

continued on page 9

The National Weather Service Working Harder for You – Improvements to the Short Term Forecast

by Jesse Lundquist, Meteorologist

In the Information Age, weather data can be obtained from many different sources. As a primary source for weather information, the National Weather Service in Goodland, Dodge City and Pueblo conducted a test from February through May this year to enhance the first 12 – 24 hours of the forecast (short term).

During the test, meteorologists updated the short term portion at least once every 3 hours, with more frequent updates during active weather (precipitation, fire weather, fog, etc.). An update could be as simple as incorporating the latest observations from across the Tri-State area into the forecast, or as complex as revamping the timing/coverage of precipitation based on the latest radar and satellite imagery. Once the forecast was refreshed, an updated forecast discussion was sent if the meteorologist thought the changes to the forecast warranted a revised discussion. The meteorologist would also look over any active hazards (watches, warnings, or advisories) to see if changes needed to be made based on the latest forecast

One of the benefits of the test was the development of new tools that allow the short term meteorologist to add more detail quickly so the updated forecast could be sent out to the public faster. These fast, frequent updates become even more important during hazardous weather, such as a winter storm or severe thunderstorms, when the latest timing and information may mean the difference between life and death. In addition, hourly resolution during the short term allows the meteorologist to be more specific, keeping the customer informed with how the weather may impact their day.

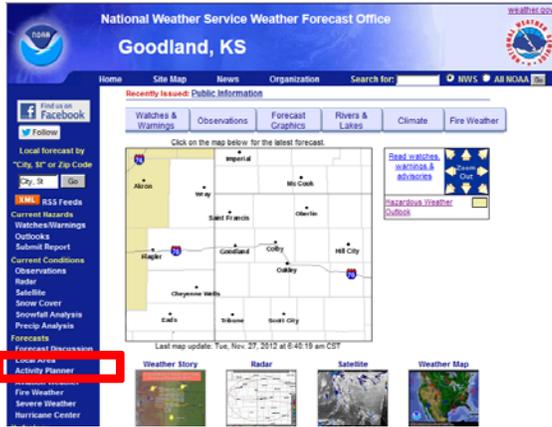
The hourly resolution also helps the short term meteorologist when composing the aviation forecast. Since both products have an hourly resolution, the meteorologist uses the already complete public forecast for the aviation forecast. By doing this, there is no disconnect between the two products in regard to timing or duration of a particular weather field.

During the test we received positive feedback from the staff as well as from customers such as Emergency Managers. Almost all of the feedback agreed that the frequent updates and added detail during the short term were well received and valued by our customers. As a result, the Goodland weather office decided to continue implementing the same practices on a routine basis out to 24 or 36 hours after the test was completed.

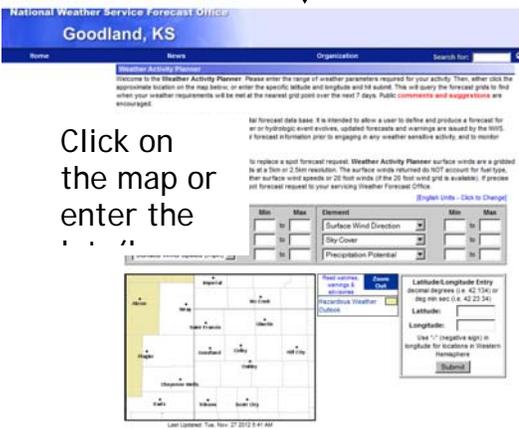
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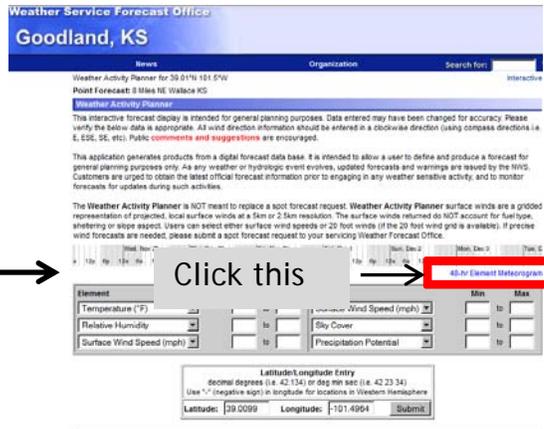
So where is this hourly data found? Below are a few images from our [website](#) that will guide you to our hourly weather graph.



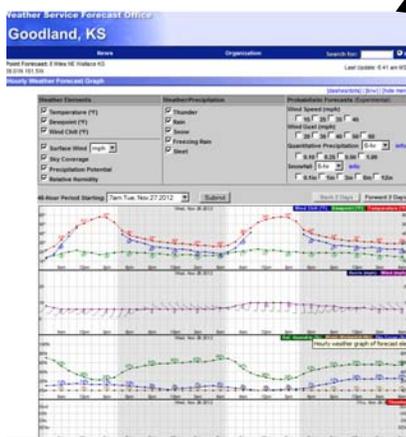
Click this



Click on the map or enter the



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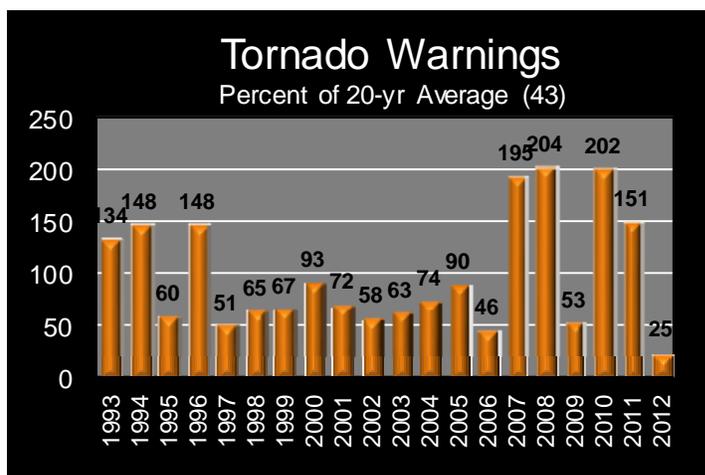
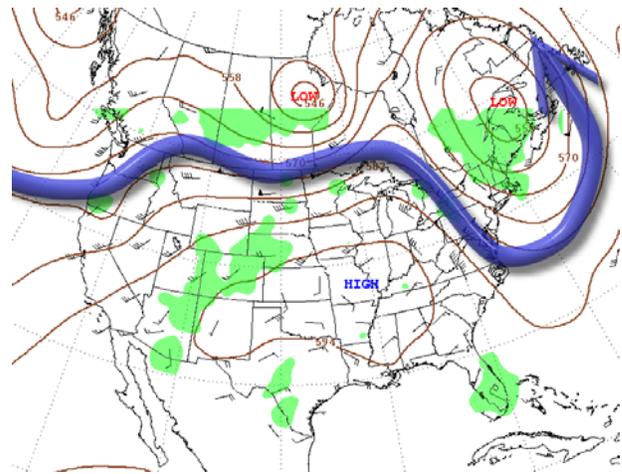
The Summer of 2012

Hot and dry, with a quiet severe weather season

By David L. Floyd, WCM

I'm sure in late December, many people in the nation's mid-section will be saying 'good riddance' to the weather of 2012. Between the record setting high temperatures in late June, the widespread shortage of rainfall throughout the summer resulting in crop failures and an increase in the number of wildfires, it's been a roller coaster of a weather year.

The frequency of summer rainfall events, as well as the average temperature, is highly dependent on the winds aloft. In 2012, a persistent ridge of high pressure in the upper atmosphere dominated the pattern across the Central U.S. as shown in the map below. This chart was valid on a day in late June but it typifies what was occurring for many weeks. High pressure aloft generally results in sinking air and tends to suppress precipitation. The green shading shows locations receiving greater than 0.01" of moisture for this day. Note the lack of rainfall in the vicinity of the high. The area of green over Colorado and Nebraska was generally very light rainfall. Winds aloft near the high are weak, often reaching speeds of only 10-15 mph around 20,000 feet. These are the winds which guide storm movement, so if thunderstorms do develop, they tend to dump a lot of rain over a very small area, leaving most other locations high and dry. In contrast, the long blue arrow indicating the jet stream shows where more active weather was occurring.



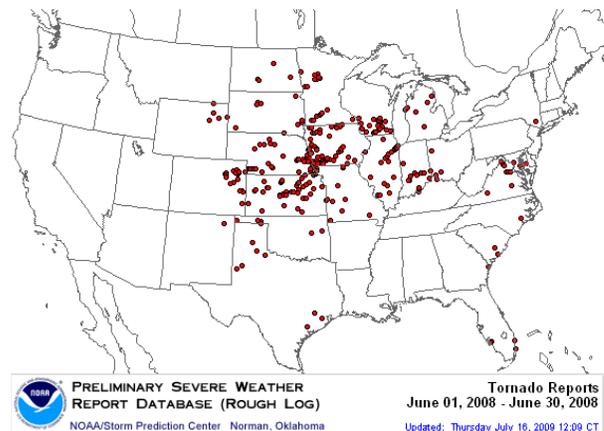
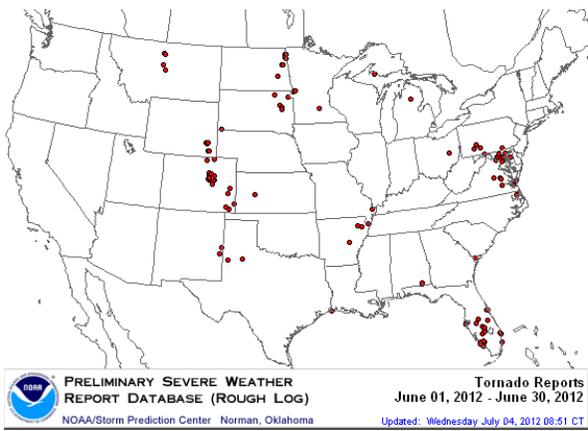
If there is a bright spot, it would be in terms of severe weather. The lack of thunderstorms in May, June and July hurt the area in terms of precipitation, but fewer reports of severe weather were received. The chart to the left shows the number of tornado warnings issued by the Goodland office over the past 20 years. In an average year we issue 43 tornado warnings. In 2012 we issued 25% of normal, or 11 warnings. Only five tornadoes were reported this calendar year which is a good thing!

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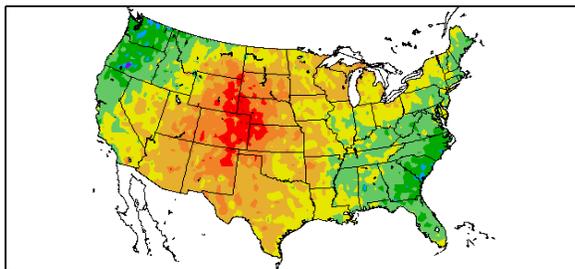
That number is very low but certainly not a record. There is one year in the 63-year tornado record (1974) which had only one tornado occurrence.

Not only was there a shortage of tornadoes in the Tri-State area served by Goodland, but nationwide there were fewer reports as well. The two maps below show preliminary tornado reports for the month of June. The year 2012 is on the left and a more active June, 2008, is shown on the right for comparison. The influence of the strong upper high pressure over Kansas and Missouri in 2012 is readily apparent on the left with only a few tornadoes in both states for the entire month of June.



The charts below show June Departure From Normal Temperature for the nation on the left, with Percent of Normal Precipitation on the right. Certainly we weren't alone in the hot, dry pattern. The red shading on the left map indicates temperatures greater than 6 degrees above normal, which is impressive for an entire month. Only the Northwest and the Southeast saw below normal temperatures in June. On the right, Percent of Normal rainfall is shown where red is less than 50% of normal. Once again, these maps illustrate that the dry weather was widespread across the country, and not confined to the Tri-State region.

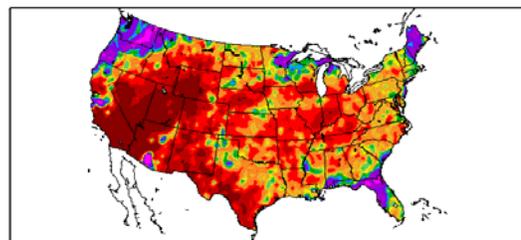
Departure from Normal Temperature (F)
6/1/2012 - 6/30/2012



Generated 7/12/2012 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
6/1/2012 - 6/30/2012

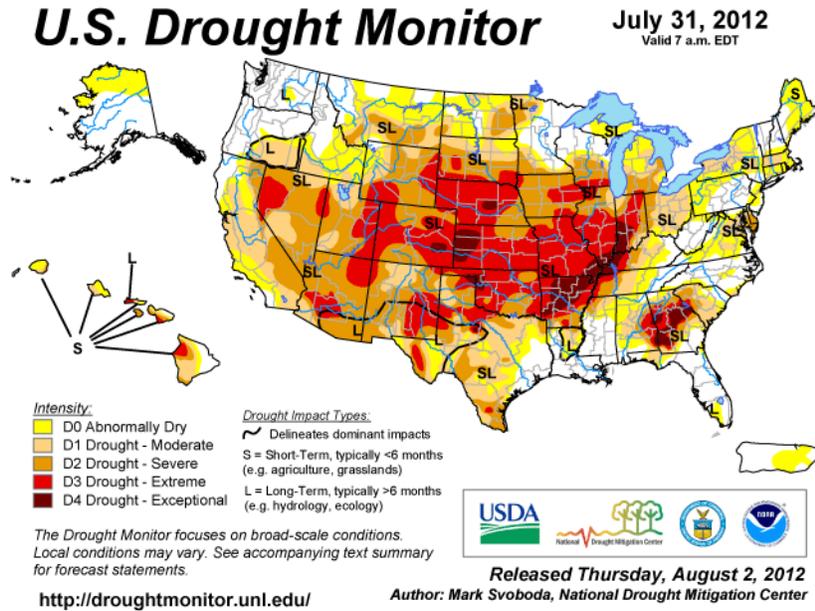


Generated 7/12/2012 at HPRCC using provisional data.

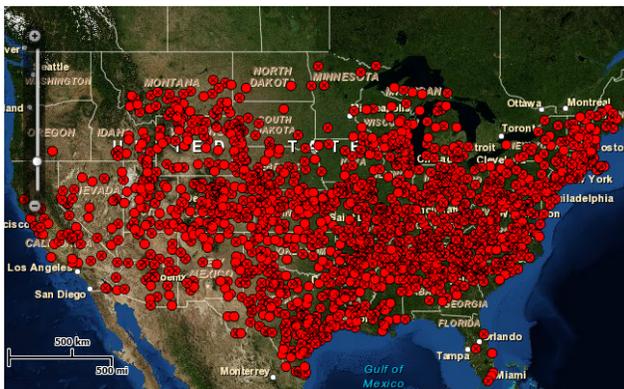
Regional Climate Centers

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As the upper high pressure area continued to dominate through July, the extent of drought conditions expanded. The Drought Monitor for July 31st showed “Exceptional Drought” (dark red) across western Kansas and “Extreme Drought” (lighter red) elsewhere.

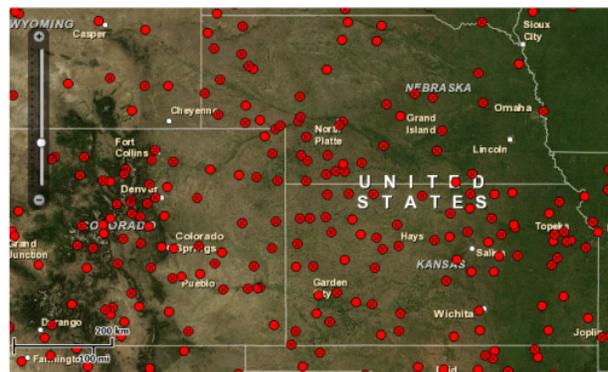


U.S. Daily Highest Max Temperature Records set in June 2012



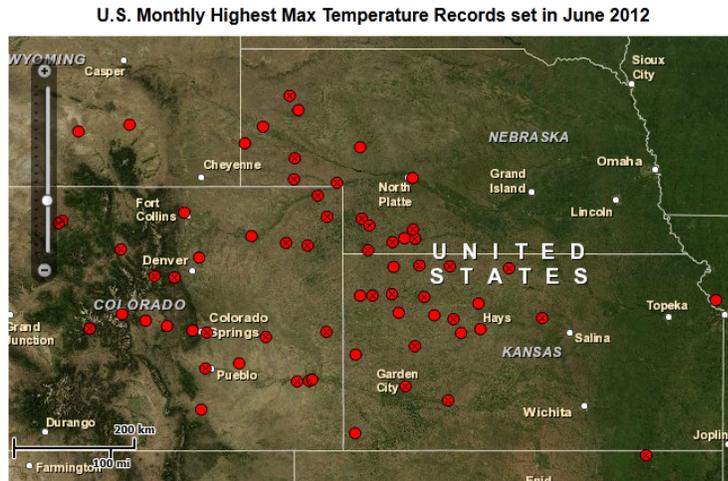
Another way to look at the extent of the hot weather in June is to count the number of temperature records tied or broken. The map to the left shows all the stations setting high temperature records during the month. The map is impressive, with 2284 daily high temperature records broken and another 1,000 tied! The map below shows the locations for stations in the local area.

U.S. Daily Highest Max Temperature Records set in June 2012



continued from page 6

In addition to daily temperature records falling by the wayside, monthly records (highest temperatures for any month of June) also occurred. The map below shows all the stations which tied or set a new record maximum temperature for the month of June.



And finally, many stations set new all-time high temperature records. In other words, during June of 2012, the stations below either tied the warmest temperature ever recorded, or reached a temperature that had never been recorded in the station's history for any month. Some specifics include:

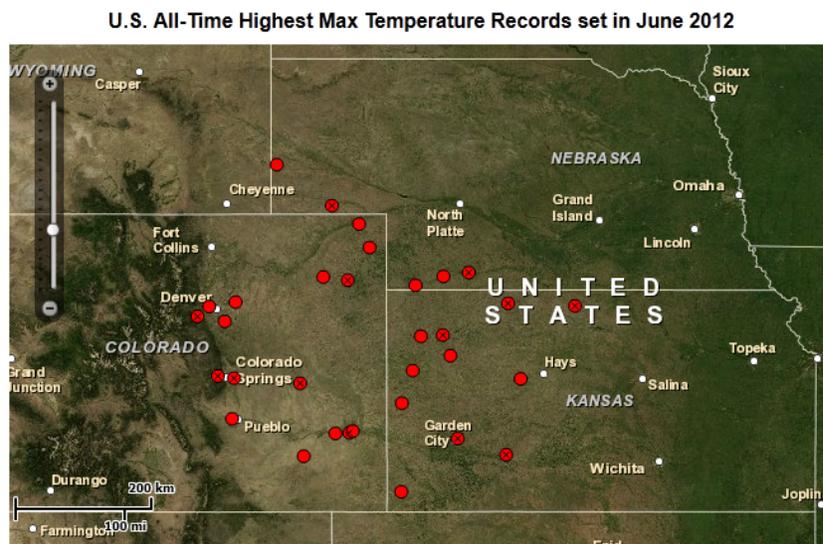
Yuma, Colorado ... 111°F

Colby, Kansas ... 113°F

Norton Dam, Kansas ... 118°F

Tribune, Kansas ... 111°F

McCook Nebraska ... 115°F (previous record July 20, 1932)





How dry is it?



GLD November 2012 precipitation has totaled only a trace. Looking through records back to 1906, there have been only 3 other Novembers on record with less than 0.01" of moisture: 1932, 1939, 1959.

Site	Year-to-Date Precipitation (through December 4, 2012)	Departure from Normal
Burlington, Colorado	10.56 Inches	-6.56 Inches
Goodland, Kansas	9.02 Inches	-10.24 Inches
Hill City, Kansas	9.74 Inches	-12.65 Inches
McCook, Nebraska	8.13 Inches	-13.85 Inches

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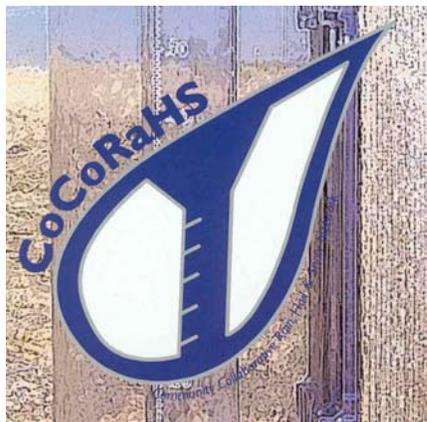


Dave Floyd (N5DBZ) and Scott Mentzer (NØQE) operate radios during SKYWARN Recognition Day

In addition to a few NWS meteorologists who are also amateur radio operators, two other SKYWARN volunteers visited the office to participate. The office contacted approximately 300 other radio operators during the event, including hams from Italy, Estonia, and Argentina.

Further information about SKYWARN Recognition Day is found at:

<http://www.wrh.noaa.gov/mtr/hamradio/>



Interested in reporting precipitation? Contact Dave Thede at david.the@noaa.gov for more information!

Cooperative Observer News



Alice Evans received a 30-year award for her reports from Norton County, Kansas



Mike Lentz, USBR Superintendent, accepted a 50-year institutional award observations taken at Norton Dam.

Other observers receiving awards included:

- Penny McPherson and Doris Price, Kit Carson, Colorado, 10-year award.
- Tom Mandis, Idalia, Colorado, 15-year award.
- Mike Hennick, Sharon Springs, Kansas, 15-year award.
- Rick Starks, Haigler, Nebraska, 15-year award.
- Annette Long, Max, Nebraska, 15-year award.
- Gary and Nancy Gladin, Oakley, Kansas, 20-year award.

Congratulations to all, and thank you for your dedicated service!

Measuring Snow...

Snowfall is measured by taking several readings in an area that is relatively undisturbed by wind. *This is the most challenging part of the job, as it is often difficult to measure snowfall due to local high wind conditions.* Your rain-gage should be left outside during the winter season **with the funnel removed.**

Push the gage into the snow



Turn the cylinder in the snow



Pull the cylinder out of the snow



Sometimes the wind prevents snow that falls from entering your gage. If this happens, empty the snow in your gage, and take a snow core measurement. Find a location that is representative of the snow that fell. Place the gage upside down over the snow and press the gage down to the ground, turning the gage around a few times to get a good measurement. If the snow does not want to lift out when you raise the gage, slide something under the top of the gage (a fly swatter often works well), and lift the gage with the snow inside off the ground. Turn the gage right side up, and proceed with melting the snow as usual to obtain the moisture content.

To obtain the moisture content of snowfall, empty the gage into another container, or if practical, bring the gage inside to melt the snow. Pour the melted snow into the funnel to measure its liquid content. This is important in keeping track of moisture as snow depth is not always an accurate indication of moisture content.

There is a myth that snow melts in a 10 to 1 ratio – 10 inches of snow equals one inch of rain. This is almost never true! The ratio can vary from 8 to 1 to 20 to 1 or more depending on many factors including surface air temperatures. For more tips check out the Cooperative Observer website at:

http://www.nws.noaa.gov/om/coop/reference/Snow_Measurement_Guidelines_05-1997.pdf

Welcome Ryan and Joe!

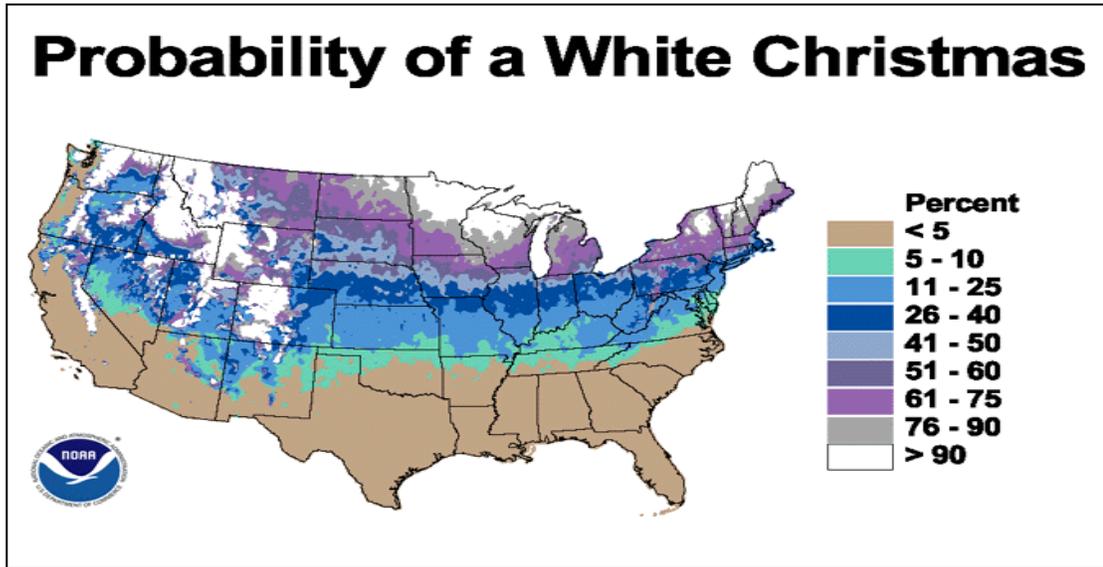
Two new employees have joined the staff in Goodland in the last few months. They are Ryan Husted and Joe Moore.

Ryan was promoted from his previous position at the National Weather Service in Memphis, Tennessee. He graduated from Texas A & M with a degree in Atmospheric Science. He also worked at the National Weather Service in San Antonio while obtaining his degree.



Joe joined the staff in July. He worked at the Meteorological Development Laboratory in Silver Spring, Maryland while obtaining his degree in meteorology from Millersville University.





By Scott Mentzer, Meteorologist in Charge

If you are wondering what the climatological chance of a "white Christmas" is, the data follow. Note that a white Christmas is defined as a Christmas with at least one inch of snow on the ground in the morning. For other holiday climatological data, please visit the website below.

http://www.weather.gov/gld/?n=holiday_climate

Location	Climatological Chance of a White Christmas
Burlington, Colorado	15%
Goodland, Kansas	18%
Hill City, Kansas	19%
McCook, Nebraska	21%

Finally, our friends at the North American Aerospace Defense Command (NORAD) will again track Santa's flight on Christmas Eve. Be sure to visit

<http://www.noradsanta.org/>

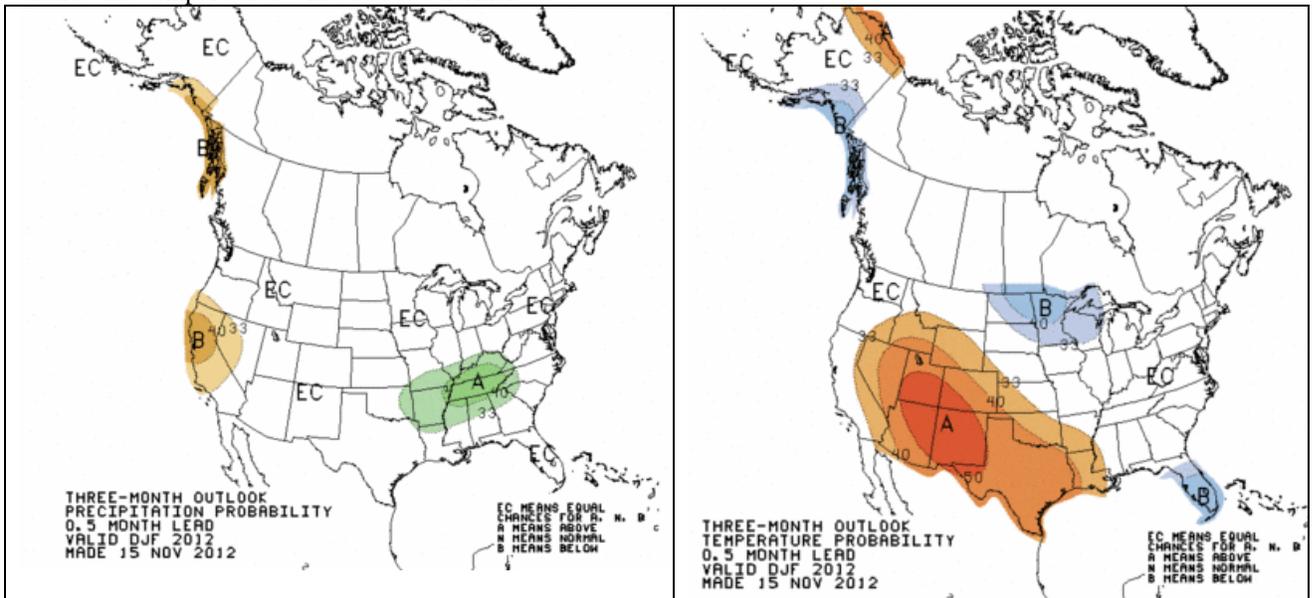
and watch Saint Nick's journey around the world.



Climate Corner

Current Weather Information for Our Area Latest Extended Outlooks

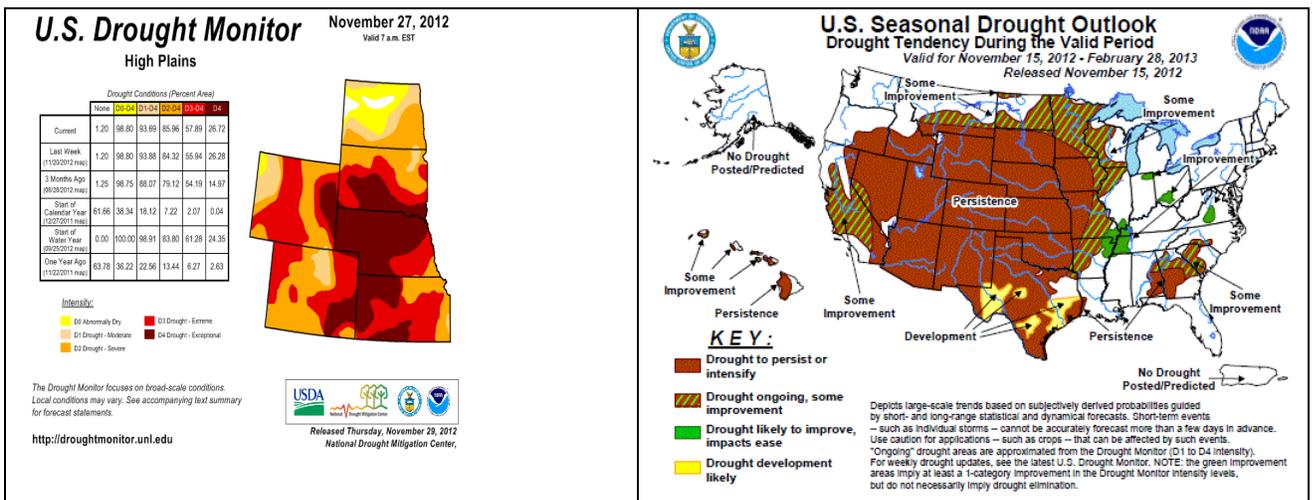
Here are the latest precipitation and temperature outlooks from November 2012 to February 2013. For the Tri-State area there is an equal chance of precipitation being above or below normal through the period while there is a greater chance that temperatures will be above normal.



Precipitation Outlook (Dec '12 – Feb '13)

Temperature Outlook (Dec '12 – Feb '13)

The Tri-State area is currently under the extreme or exceptional drought classification. Drought conditions will likely persist or intensify during the winter.



Current Drought Monitor

Drought Outlook (Nov '12 – Feb '13)

Need more information? Check out the U.S. Drought Monitor website: <http://droughtmonitor.unl.edu/>

NWS Goodland Is On Facebook and Twitter

By **Joe Moore**

<http://www.facebook.com/US.NationalWeatherService.Goodland.gov>

<https://twitter.com/NWSGoodland>

Follow NWS Goodland on Facebook and Twitter for the latest weather information across the tri-state region! We post our GraphiCast product to both pages each morning, which summarize our weather forecast in an easy-to-understand graphical format and accompanying text. We also have begun publishing the weather history of the day each morning. When there is significant weather, we post informative and interesting information that goes beyond our routine weather products. Some of our recent posts include: local records that were close to being broken, information about upcoming meteor showers, and satellite imagery of blowing dust across the area.

As an experimental service, we're always looking for feedback to improve! Feel free to comment on our Facebook page, or tweet us at @NWSGoodland. Your feedback and suggestions will help us better serve you.

As a reminder, our social media outlets do not provide urgent warnings in times of dangerous weather! Check our website, local media, or NOAA Weather Radio for the very latest watches, warnings, and advisories.



One more way to find us - load our page using your phone's camera and a QR code reader. Scan the code above and take the latest weather bulletins with you when you are on the go!

National Weather Service

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w-gld.webmaster@noaa.gov

Please don't forget, if you have pictures or video to share of any severe weather events that take place this year, please contact david.l.floyd@noaa.gov



With your permission, your pictures and video will provide information and training materials for future storm spotters and meteorologists!

The **National Weather Service** 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. It is accomplished by providing warnings and forecasts of hazardous weather, including thunderstorms, flooding, hurricanes, tornadoes, winter weather, tsunamis, and climate events. The NWS is the sole United States OFFICIAL voice for issuing warnings during life-threatening weather situations.